UMASS/AMHERST
312066 0271 5940 4

MASS. EA15.1: 990

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

DIVISION OF FORESTS AND PARKS

GOVERNMENT DOCUMENTS
DEC 07 1992

1990 ANNUAL REPORTS

DIRECTOR'S REPORT	CHARLES H. DANE, DIRECTOR OLLIE PEIRCE, ASSISTANT TO DIRECTOR
FISCAL AFFAIRS REPORT	KENAN R. FOLEY, CHIEF OF FISCAL OPERATIONS CLAIRE D'ANGELO, ASSISTANT TO CHIEF RON HOLMES, ASSISTANT, LAND USE
RECREATION REPORT	KATHRYN JOYCE SMITH, CHIEF
URBAN SERVICES REPORT	ROBERT FREEDMAN, CHIEF BRIAN SHANAHAN, ASSISTANT CHIEF
FOREST DEVELOPMENT	THOMAS F. QUINK, CHIEF
FIRE CONTROL	PATSY BISCEGLIA, ACTING CHIEF FIRE WARDEN
SHADE TREE MANAGEMENT & PEST CONTROL	JAMES MacARTHUR, CHIEF ERNEST DeROSA, ASSISTANT CHIEF
INTERPRETIVE SERVICES	ELLEN K. ROTHMAN, CHIEF KARL W. HONKONEN, ASSISTANT CHIEF

ANNUAL REPORT

CHARLES H. DANE

DIRECTOR OF FORESTS & PARKS

OLLIE PEIRCE

ASSISTANT TO THE DIRECTOR

The past year, FY 90, was a difficult one for all in state government. The Division of Forests and Parks performed its land resource stewardship and recreation mission with fewer personnel, less money, and less control over its resources than in previous years. Complexity of administrative processes, and information requirements from higher levels of state administration, force line departments to respond by diverting scarce resources from program delivery to staff administrative functions. So much for decentralization.

On the revenue side, fee increases, accompanied by only a slight decline in facility usage, brought in over $2 million more than during the previous year. The portion going directly back into the Departmental budget increased dramatically, while the overall appropriation went down. Thus the incentive to collect more fees, which was an important factor in utilizing retained revenue, has declined.

PERSONNEL

On the plus side of the ledger, the nationwide search for a new Director of Forests and Parks ended with the selection of Charles Dane, our Chief of Recreation. In a time of stress, uncertainty and declining morale among state employees, it was of no small value to see a career employee elevated to the top job.

We also welcomed a new Chief of Recreation, Kathyrn Joyce Smith. Kathy came to us after completion of the newest SCORP report, and impressive document and achievement. An though she has been with us but a short while, she has already made quite and impression on all who have worked with her.

The year marked the retirement of Tony Castro as Chief of the Bureau of Fire Control. Patsy Bisciglia has been serving as Acting Chief. In Recreation Joe Prenda moved from the position of Assistant Chief to become the supervisor of Fall River Heritage State Park in his home city.

While there were no new parks opened or dedicated during the year, we did secure a new manager for the Waquoit Bay National Estuarine Research Reserve (WBNERR), Christine Gault. FY 90 marked the transition year from federal to state funding for this unique DEM facility.

The end of the fiscal year saw the long sought Park Ranger program, with authority to issue non-criminal citations, achieve fruition in the FY 91 Budget Statue. Position titles of Ranger and Chief Ranger were approved, and Curt Rudge became the first Chief Ranger.

STRUCTURE:

In response to the continuing pressure to achieve more with less, the new Director initiated a management analysis of the Division by Shirley Atkinson, on loan from the U.S. Defense Department, and formerly with the U.S. Forest Service. That project involved interviews with all senior staff, and led to a number of recommendations relating to; Director's span of control, line and staff function delineation, decentralization of budgetary control and accountability, and methods of implementing change. This effort should be of great assistance to us in the near future.

ANNUAL REPORT

FISCAL YEAR 1990

KENAN R. FOLEY

CHIEF OF FISCAL/OPERATIONS

CLAIRE D'ANGELO

ASSISTANT FOR FISCAL AFFAIRS

RONALD HOLMES

ASSISTANT FOR LAND USE ADMINISTRATION

The Fiscal/Operations Office is the newest Bureau level section in the Division of Forests and Parks. The need was realized several years ago by former Director Gilbert Bliss who sought to decentralize the control of expenditures, placing more fiscal responsibility and decision making at the field level. Decentralization would free up Bureau level time for increased program emphasis. There was still, however, a sizeable need to have a central processing office for the coordination of fiscal affairs.

The new office demonstrated its necessity with the advent of the new State Accounting system MMARS. Allocations, encumbrances and payments were all to be entered and tracked through use of this new system. Contracts and commodity information were only to be accessible through use of the system. The Fiscal Office took the lead in training and providing direction and information regarding the system to the other Bureaus, Regional Offices and field facilities of the Division.

The importance of the Fiscal Office was demonstrated early in the fiscal year when Director Kendall appointed the Chief Fiscal Officer as part of a "troika" to replace him when he was appointed as Commissioner.

The Fiscal Office is responsible for the coordination of all of the fiscal transactions for the Division. This complex number of operations are reviewed, processed and tracked through manual and electronic means. Support and informational updates for the Regional and field fiscal offices is provided on a daily basis. Constant interaction with the Department's administrative services keep the necessary Divisional fiscal information up to date.

Based upon a coordinated Divisional budget request the Fiscal office compiles spending plans from Bureau cost centers into a Financial Plan. The plan assists in the allocation of the Department's consolidated budget back to the Division to support programs, operations and facility maintenance. The fiscal office is charged with the allocation of these resources to the Bureaus and Regional offices. Once allocated all encumbering, purchasing, contracting and are monitored.

The Fiscal office assists all program areas of the Division in all aspects of fiscal resource administration. The fiscal administrative staff provide current information on techniques and assists in solving purchasing and payment problems.

The Revenue section of the Fiscal office monitors Divisional receipts from field facilities, Regional offices, grants from Federal agencies, sales of wood products, licensing fees, concessionaires as well as special use permits and leases.

Several Federal grant programs are monitored for the three Bureaus of Forest Management, Fire Control and Shade Tree Management, as well as the new Divisional, facility a National Estuarine Research Reserve.

Reconciliation of these Revenues with bank statements, treasury receipts and the comptroller's reports has become an increasingly important responsibility with the use of these revenues as part of the Department's allocated funding through the revenue retention program. The Division of Forests and Parks is responsible for the major portion of all Departmental revenues.

The revenue section is also responsible for the processing of all refunds requested from patrons of field areas.

Probably the most significant advances in revenue collection that the Division has seen in years took place this year as a result of an auditor's report sighting the need for improvement in collection methods. The first issue was to be the elimination of the "cigar box" type of collection repository. All areas, not already using one, were issued a standard collection box. A second issue was the submission of accurate weekly reports of receipts. Several areas were issued new calculators to assist in his process.

The most important advance, however, as the introduction of several electronic cash registers. Primary use sites were selected to receive the cash registers as a means of better tracking revenues. The intent has been to provide the field supervisor with an accurate record of sales and assist him/her in identifying problems in revenue collection procedures. This program begun in a few parks and beaches will be expanded in FY 91 as funding allows to include more parks as well as the Rink and Pool facilities.

The permit and land use section of the fiscal office is responsible for the bidding and awarding of concession permits for use at all of the Division's field facilities. Other permits that are tracked include special permits for radio transmitters located in the Division's fire towers, cottage permits for units located in several parks, pier and mooring permits at several of our lake facilities, as well as permits for non-profit groups, handicapped patrons, special military operations and an occasional movie filming crew. Attendance reports are tracked for all Divisional areas and consolidated reports are provided by this section also.

The Fiscal Officer maintains the records on fifty-three units of housing in the custody of the Division. A committee was formed to review the policies pertaining to the use of such housing. A new Departmental policy on use of such units for employee housing is in the process of being formulated. Maintenance and repairs to housing units has been of concern for some time so several site visits were planned to re-evaluate current conditions.

The Fiscal office also provides services to the Bureaus and Regional facilities as the Management Information System coordinator for the Division. Computers are currently being used to track personnel and commodity expenditures in the Regional as well as the Boston Office. Specially developed programs are coordinated in their use through the Fiscal office.

ANNUAL REPORT
FISCAL YEAR 1990
BUREAU OF RECREATION
KATHRYN JOYCE SMITH, CHIEF

Introduction

The Bureau of Recreation serves some 12 million visitors from around the state, the country and indeed the world. In addition to the visitors who enjoy camping, picnicking, swimming, hiking and other activities at the rural parks and ocean beaches, 2.4 million people use the bureau's 18 skating rinks, and another 241,000 use the 20 urban pools.

The Bureau's budget is approximately $11 million, while fees charged for activities produce revenues totalling over $9 million. The bureau's recreational facilities are located within the Department's 270,000 acre forest and park system. With more than 300 full-time employees and 1,000 season staff the bureau offers services to the public and protects natural and cultural resources. The programs and services delivered by bureau staff serve a diverse population from the hills of the Berkshires to the ocean beaches of Cape Cod. The rinks serve a regional population, while the pools serve more of a local, urban residential, often low income population.

The Bureau of Recreation experienced a drop in visitation in FY '90 from 14 million to nearly 12 million, while the revenue increased due to an increase in user fees. There may be many variable contributing to this decrease including the inability to fully staff and service all facilities. Of the nearly 150 recreational facilities, all were staffed at minimum or below minimum levels with some 15% not serviced at all. Many of the parks scheduled to open in the spring were delayed two weeks to two months, many with reduced hours.

It seems logical from this experience that any savings gained by reducing full-time and seasonal staffing levels was offset by a resulting decrease in revenues and attendance.

The following pages chronicles some of the more significant activities occuring within the Bureau of Recreation. The information also includes detailed, park by park charts on attendance and revenue.

BUREAU PROGRAMS

Visitor Services

Employee Relations - Organized the first overnight Recreation Supervisors conference involving 70 field supervisors and managers from the Boston office. Implemented a Bureau Management Bulletin to improve communication between the Boston office and the field operations.

Public Information - Produced 10 new trail maps bringing the inventory up to 40 trail maps. Redesigned all campgrounds maps to ensure consistency of graphics for each facility. Assisted in producing 13 park profiles and 2 trail descriptions. Updated the Handicapped Access Brochure to include 4 new areas.

Public Education - Converted Forests and Parks slide show into a video tape which can be borrowed by the public or taken to meetings, etc.

Access for People with Disabilities - Completed shower improvements at Horseneck Beach campground comfort facility. Printed weather resistant DEM Grievence Policy signs for each of the major recreation facilities. The grievance policy is for people with disabilities who feel as if they have been discriminated against.

Graphics - In addition to large-scale projects, the Graphics Staff was responsible for range of other accomplishments including: small brochures; flyers; signage; charts and graphs for reports and presentations; illustrations; calendars and certificates of appreciation. Two large maps of the Cape Cod Rail Trail were developed, embedded in a hard surface and sent to Region One for outdoor usage.

Rinks and Pools

Ice Rinks - FY 90 saw the Rinks program experience severe personnel shortages in both full time and seasonal positions. In addition every step possible to reduce expenses was implemented efficiency in operations. The program experienced an overall deficit reduction as a result of these cutbacks and a revenue increase due to fee increases. However, the hidden indirect result of budget and personnel cutback was a reduction in annual maintenance increasing the demand for this service in FY 91. On a far more promising note, capital projects began to address a long standing need for capital improvements. The most notable of these projects was the roof replacement at the Worcester, Brockton and Springfield Rinks.

Swimming Pools - Pools were unable to open until July 1st in FY' 91. This lost two weeks of the summer operating season for FY 90. The loss is devastating to the public, where the demand for services at these facilities continues to increase season after season. In many cases learn to swim classes had to be closed at capacity and many youngsters never receive this valuable instruction. It is the public's demand and support for these programs which should encourage continued support for D.E.M.'s 20 swimming pools.

Park Ranger Program

The acts of 1989 were monumental for the development of the DEM Park Ranger Program. The titles of Park Ranger and Chief were created, the ability to write non-criminal citations for violations of Forests and Parks Rules and Regulations was established and the retention of all fines written by Park Rangers by the divisions within the division was secured. Park Rangers provide patrols involving crowd control, traffic direction, search and rescue, rules and regulations enforcement, animal control, and visitor services functions. In addition the Park Ranger program is overseeing a program whereas trained DEM employees are sworn in as Deputy Environmental Police Officers and are allowed to write non-criminal citations.

Regional Accomplishments

Region One

Programs/Services - Department of Correction crews from MCI-Plymouth were used on a variety of projects throughout the regional.
Bristol County House of Correction supplied a crew 2 days per week to work at Horseneck Beach and Demarest Lloyd State Park.
Division of Youth Services at Nickerson State Park worked 2½ days per week on a wide range of park projects.

Project C.O.A.C.H., a program to employ persons with limited court sentences, was very successful on projects at Scusset Beach, Shawme-Crowell State Forest and Washburn Island.
Host Family Program was expanded at Massasoit, Scusset, Shawme and Nickerson.

Adopt-A-Trail program continues to be a success on the Cape Cod Rail Trail and Nickerson Bike Trails.

Pilot recycling program at Massasoit, Nickerson and Wompatuck.

Pilot Windsurfing program at Gooseberry Neck Island.

Pilot Surfing program at Horseneck Beach.

Trail expansion/development at Freetown and Myles Standish.

Staff in Region One worked to protect the endangered species Piping Plover, at the state beaches, and other critical habitats within Myles Standish Forest. A dune grass planting projects at MSSF was initiated to protect state beaches from further erosion.

Rehabilitation -

- .In house roof repairs at the Dighton Rock State Park musuem and headquarters.
- .In house construction of handicapped accessible showers at Horseneck Beach campground.
- .In house design and construction of entrance way to Myles Standish Monument.
- .Sandblasting and painting of the Fall River Heritage State Park Bell Tower and refurbishing of the South Face Breakwater.
- .Campsite restoration at Horseneck, Massasoit, MSSF, Nickerson, Shawme-Crowell and Scusset.
- .Proto-type benches (3 designs) were made by Assistant Regional Pete McNamara for use at Borderland, Wompatuck and Nickerson.
- .Development of a wildlife pond and meadow at M. Correllus State Forest.
- .Construction/development of a wildlife pond and meadow at M. Correllus State Forest.
- .Construction/development of building at Waquoit Bay Research Reserve headquarters.

Region Two

Programs/Services - Salisbury Lifeguards, in competition with eight other beaches, won the Nauset Beach Lifeguard Invitational Tournament.

The following individuals and organizations donated their services in the construction of a Gazebo at the entrance island to the parking lot at Halibut Point State Park:

Mr. Donald Johnson, Rockport Rotary Club, Gloucester Vocational School. Amount of Contribution: Mr. Johnson donated granite foundation blocks; the Rotary Club donated $400.00; Vocational School donated labor.

The Old North Bridge Hounds Association donated $500.00 for much needed bridge decking within the Great Brook Farm State Park.

Despite an overall reduction in revenues (3% + in dollars) due to a rather poor summer weatherwise, it would appear the larger, more popular areas are up in attendance even with the increased fees.

For the second consecutive year staff at Salisbury Beach participated in the "Coastweek" Cleanup Project.

Employee Mike Magnifico, Supervisor of Salisbury Beach State Reservation received the 1989 Manuel Carbello Governor's award for excellence in public service.

Capital Projects - Besides the Gazebo constructed at Halibut Point State Park, Salisbury Beach installed approximately 4,000 ft. of fencing as part of the ongoing dune restoration project and dune grass plantings.

Region Three

Programs/Services - 700 people participated in Girl Scout Day Camps at Otter River State Forest. and another 500 people from the North American Camping Association and 150 people, 100 horses from the Cross State Trail Riders.

At Quinsigamond State Park there were seven Regattas at the facility with over 50,000 people in attendance.

At Streeter Beach there were 950 people from the Pioneer Valley Radio Control Club.

Over 100,000 people participated at Wachusett Mountain State Reservation Ski area, which had several events going on over the fall and summer.

At Blackstone Heritage 120 people from the Blackstone Valley Bus Tours and 250 people from the Blackstone Heritage Homecoming Colonial Encampment were in attendance.

At the Gardner Rink 13,000 people participated in the Home and Leisure Show 2,800 in a Sportsmen Show and 24,000 in the USSR Friendship Tour.

Rehabilitation - At Leominster State Forest new gates were installed at Rocky Pond Rd., eight miles of boundary work was completed, thirty-eight new grills were installed in picnic area and forty-five new "No Parking" signs were installed along Route 31.

At Otter River State Forest headquarters building a new garage was completed with in-house staff and a new bridge at beach at Lake Dennison was built.

At Wells State Park six miles of boundary work was completed. At Holland Pond and Streeter Beach new free standing grills were installed.

Regional Rehabilitation (Cont'd)

At the Regional Headquarters a crew from Blackstone Heritage and Douglas State Park painted the 14th floor of the Saltonstall building in Boston for the Division of Resource Conservation. Management Foresters marked about 15MBF of good quality white pine that was cut and milled by in-house personnel for sign stock. We set up a new Regional Sign Shop at Wachusett Mountain State Reservation. Major changes in Regional Office were implemented by redoing a portion of the office and moving people to new offices.

Capital Projects - At Quinsigamond State Park we designed changes to the sewer ejection system.

At Holland Pond Recreation water lines were replaced in area using in-house personnel and contracted to replace the water control system.

At Streeter Beach major renovations were accomplished at the picnic area for handicapped accessibility.

Roofs were replaced at Weihn Memorial Pool, Petro Memorial Pool and Leominster State Pool.

A collapsed wall in Capron Park at Blackstone Heritage Park was repaired.

Fiscal Information - Income at Otter River State Forest complex was down in FY 90. The Supervisor offers the following reason for the reduced attendance and revenue: (1) The increase in state fees made the area less desirable: Private camping areas adjacent to the park have fees that range from $14-$18 per night which include electricity, water and sewerage hookups at each site.

Fiscal Information (Cont'd)

(2) Rumors of satanic cult activity in the nearby Birch Hill Area were circulated throughout the State. (3) Otter River Camping Area was open 2 months longer in 1989 than in 1990.

At Quinsigamond State Park a drop in revenue may be due to the fact that we did not change an entrance fee for some of the Regattas. Holland Pond Recreation Area did not open until after 4th of July much shorter recreation season. And at Spencer State Park the swimming area was not staffed until after July. Problems with septic system.

Region Four

Programs/Services - Lake Lorraine State Park in Springfield became an operating part of the Forests and Parks system in FY 1990. This small seasonal area contains an excellent beach but no picnicing and has limited parking.

The Eighth Annual Northeast Chevrolet-GMC Truck Meet was held at the Wendell State Forest. Over 125 trucks were entered from as far away as Ontario and Ohio.

The Woodman Pond Group Camping Area in the Brimfield State Forest was host to 100 girls and 40 boys from the Polish Scouting Organization which has branches all over the world. The purpose of the two week encampment is for the scouts to learn about the land of their ancestors and for this reason only Polish is spoken.

Rehabilitation - John Sadlow, Regional Construction Supervisor, built a new cinder block office building at the Westfield Pool to replace the wooden one burned down by vandals in the summer of 1988. He also completed the Regional Office addition which added ten offices and for the first time provides each forester with their own private office.

Employee Recognition - Al Koblinski, Supervisor of the Holyoke Range State Park, was the 1989 recipient of the Al Hendry Award. Jim Dion, Assistant Regional Supervisor, was a recipient of a Pride-In-Performance Award in 1989. Jim Dion, Palma and Rollie Levielle, Sarkis Piligian and Gerry Parenteau all retired in FY 1990.

Region Five

Programs/Services - At Otis Reservoir the promulgation of new rules and regulations may begin to help Forest and Parks better manage this problem-plagued area. As each year passes, rules and regulations can be updated to reflect the needs of all who use this beautiful water body.

Rehabilitation - Rehabilitation of the Vietnam Veterans' Memorial Skating Rink included a sound system, heaters, HVAC system, zamboni equipment, team boxes, team rooms, and mechanical room systems overhaul. Many of our customers have expressed positive feelings for the up-coming rink season, even though the ice rental fee has gone up. They see a commitment on Forest and Parks part to provide the highest quality skating experience possible even in poor fiscal times.

Scenic vistas on Mount Greylock State Reservation were reopened to hard work by Shade Tree Management, Fire, and Recreation staff. Brush has been removed from roadsides and several scenic vistas have been restored, allowing the visiting public to experience the natural beauty that the Reservation offers.

Trail accomplishments were due to the efforts of Regional Trails Coordinator, Robert Hatton. Summer Youth Corps personnel were hired to do trail rehab work throughout Region V. At the summer meeting of the Mount Greylock Advisory Council comments were made by avid hikers that the trail system within Berkshire Country Forests and Parks were at the highest level of maintenance that they had been in many years.

The SYC program and assistance from the many volunteer groups, as well as our own staff, made this possible.

Rehabilitation of Pittsfield State Forest has undergone a face lift under the supervision of Mark Todd. Comfort station at Parker Brook Camping areas were renovated and a new roof installed on the building. All buildings were painted and stained and siding replaced as needed. The contact station roof was replaced and building were painted.

Acquisitions - The purchase of the Greylock Glen properties (828 acres) in the Town of Adams by DEM, necessitated meetings with the Board of Selectmen and police officials to discuss the management of this parcel until such time as Heritage Greylock becomes a viable project.

Miscellaneous - Directly effecting the Glen property and the Reservation were the two landslides that occurred in 1990. One on the east face on May 14,1990, and a second slide in the Hopper on August 9, 1990. A major landslide had not occurred since 1901, and the renewed concern over possible future landslides has prompted Forest and Parks to video tape both slides and to monitor any changes that may threaten the safety of the general public.

Annual Report
Fiscal Year 1990
Bureau of Interpretive Services

Ellen K. Rothman, Chief
Karl W. Honkonen, Asst. Chief

Core Program

In spite of the fiscal crisis facing state government in 1989-1990, the Bureau of Interpretive Services continued to deliver high quality -- if a smaller quantity-- of programs in the Massachusetts state forests and parks. During the summer of 1989, the Bureau employed 29 seasonal interpreters in the traditional, rural parks. Year-round staff were in place at Holyoke Range, Walden Pond, Borderland, and Maudslay State Parks, as well as in the Heritage State Parks. Approximately 79,000 people participated in some kind of interpretive activity, ranging from historic house tours to fishing derbies, from early morning bird walks to evening campfires, from pond explorations to coastal clean-ups. In addition, a large percentage of the roughly 650,000 people who visit Plymouth Rock in the summer benefitted from seven-days-a-week interpretive coverage of the portico. For the second year in a row, an interpreter was stationed at the newly refurbished Myles Standish Monument in Duxbury on summer weekends. Ten Island Managers provided interpretation, rules enforcement, and maintenance on Gallops, Grape, Great Brewster, Calf, and Bumpkin Islands in the Boston Harbor Islands State Park, and all operating Heritage State Parks offered environmental education, arts-in-the-parks, and recreational programming throughout the year.

As in previous years, all interpreters and Island Managers were trained at the annual Interpretive Training Institute. While the FY 1990 Institute (for FY 1991 seasonals) took place at Horizons for Youth in Sharon, MA, the 1990 staff was trained, as in the past, at Cape Cod Sea Camps in Brewster. During the spring of 1989, Bureau staff developed a new curriculum focusing on water; it was introduced by a series of workshops at the 1989 ITI and implemented during the 1989 [FY 1990] season. Considered a great resource by the staff, the water kit was widely used in summer programming. Each interpreter presented at least one program a week focusing on the water theme, i.e. pond ecology, the water cycle, conservation, etc. A lack of staff time and money forced us to abandon, at least temporarily, our plan to make the water kit the first in a series. The Junior Ranger program continued at 10 parks, with 266 young people participating and 176 actually completing the requirements.

In spite of limited resources, we were able to add two new interpretive programs during the winter of 1990: Jerry Flaherty, the long-time summer interpreter at Wompatuck State Park in Hingham, offered 14 programs during the winter months, attracting several hundred people to lectures and demonstrations on astronomy, winter tracking,and waterforwl.At Krug Sugarbush in Chesterfield, the Assistant Bureau Chief and a member of the UMass Leisure Studies and Resources faculty trained a group of students to work as volunteer interpreters for three days a week during the six-week sugaring season.

We also managed to sustain the Arts-in-the-Parks program, although at a lower level than in FY 1989. The permit for the Children's Theater in Residence at Maudslay State Park was renewed, after an RFP was widely circulated. Theresa Linnihan and her troupe mounted three productions in the summer and fall of 1989 and a fourth in the spring of 1990. August of 1989 marked the first annual Arts Festival at Maudslay and several thousand people came to see the renown "Bread and Puppet Theater" perform outdoors at Maudslay. In addition, the Children's Theater offered a summer workshop for young people at the park's Gate Lodge. In the summer of 1989, the Merrimack Philharmonic Orchestra performed a free "pops" concert, and thanks to a grant from BayBank, DEM was able to offer a series of free concerts at Maudslay during June of 1990. During the same peak bloom season, the Bureau and the Maudslay State Park Association co-sponsored a program of free van rides around the park for mobility impaired visitors. Sculptor Dennis Kowal completed his two-year artist-in-residency at the park.

The other area of Arts-in-the Parks activity was in the fall and spring outdoor sculpture exhibitions at Bradley Palmer and Demarest Lloyd State Parks, respectively. With only token honorarium, in the case of Bradley Palmer, and student volunteers at Demarest Lloyd, the Department succeeded in continuing the sponsorship of temporary environmental art exhibitions in its parks.

Interpretive Media

The prototype "wayside exhibit" for Forests and Parks was installed at Pilgrim Memorial in the fall of 1989. Budget constraints kept us from implementing the program, except where bond monies, Friends groups, or outside funders were available. With help from the Halibut Point Association, a set of four hand-colored panels were designed, embedded, and installed at Halibut Point State Park in Rockport in the spring of 1990. The Bureau's graphic artist's next project was a set of five waysides for the Summit House in Skinner State Park. Researched, written, and designed in the spring of 1990, the exhibits are currently being fabricated.

Fiscal constraints meant that no new park brochures were produced in FY 1990. However, a revised low-cost guide to the Cape Cod Rail Trail was designed and printed, as was a pamphlet providing Portuguese translations for the panels in the Dighton Rock Museum. Working cooperatively with the Bureau of Recreation and the Communications Office, we produced the first [#?] two-sided inserts for trail maps or park brochures. These proved to be an extremely low-cost way of providing basic information to park visitors.

Planning

Ordinarily, Bureau staff spends considerable amounts of time on planning teams led by staff from the Division of Resource Conservation (formerly Planning and Development). However, due to the nearly complete freeze on capital projects, there was less planning activity in FY 1990 than in previous years. The Assistant Chief made significant contributions to the Robinson and Salisbury GOALS plans, and the Chief continued her involvement with the plans for Walden, Maudslay, and Moore State Parks. For the first time, an interpretive plan was developed as part of the follow-up to the completion of a GOALS plan. The year-round interpreter in the Holyoke Range worked with the Chief and Assistant Chief to produce an Interpretive Plan for the Holyoke Range, which was formally appended to the park's GOALS plan with the approval of the DEM Board.

Conferences

The Bureau of Interpretive Services was involved in planning and co-sponsoring two conferences with the National Park Service: one on Urban Interpretation, held in Lowell in the fall, and another on Critical Resource Issues, held on the Cape in the winter. Several members of the Bureau's staff participated in a week-long seminar for staff trainers sponsored by the Park Service. In June, the Chief represented DEM at a national conference on "Preservation Challenges for the 1990s" in Washington, D.C.

Miscellaneous

SECRETARY'S ADVISORY GROUP ON ENVIRONMENTAL EDUCATION [SAGEE]. Convened in the spring of 1989, this group formed working subcommittees and prepared the First Annual Report on Environmental Education in the Commonwealth, which was submitted to the Secretary of Environmental Affairs in the spring of 1990. The Chief of Interpretive Services served on the three-person Steering Committee and was actively involved in editing the final report.

WAQUOIT BAY NATIONAL ESTUARINE RESEARCH RESERVE [WBNERR] As the Director of Forests and Park's designee on the Administration Committee appointed by the Commissioner to help guide the development of WBNERR, the Chief of Interpretive Services worked throughout FY 1990 to assist the new Reserve Manager in setting goals for the Reserve's research and education programs and in clarifying and strengthening WBNERR's role within DEM.

PERSONNEL CHANGES Although the fiscal crisis makes it a symbolic victory (since the position is vacant), we finally succeeded in getting the Park Interpreter at Walden Pond State Reservation upgraded to a Grade 15 Visitor Services Supervisor. When the hiring situation eventually improves, filling this position should be a high priority for the Department. The person responsbile for the Island Manager program was also upgraded to a Visitor Services Supervisor.

September 1990

ANNUAL REPORT

FISCAL YEAR 1990

Bureau of Urban Services

Robert E. Freedman, Chief

Brian Shanahan, Assistant Chief

Introduction

Even though the seven Heritage Parks and the Boston Harbor Islands ended the year with a 30% year round position vacancy rate the Bureau of Urban Services mission was still much intact. With unemployment in older industrial cities in double digits, the Bureau's Management of open space and programs took on a new importance. With decreased staffing, maintenance became a challenge as did exhibit and Cultural and Recreational programming.

Maintenance

Maintenance training was kicked off with a three state workshop in Rhode Island. Eight other training sessions were held with subjects ranging from painting to small engine repair. The Maintenance Management System was activated and a computer program to sort and report the data was created by Dave Stewart, Region II. The professionalism of the Heritage Park Maintenance staff was evidenced by the outstanding appearance of the parks.

Bureau Chief Bob Freedman addressed the Mass. Tree Wardens on the subject of landscape management in stress sites.

Attendance

Attendance for Heritage State Parks in FY 1990 was 935,413 with 186,911 attending programs, 273,723 attending managed events (eg sailing) and 474, 779 using the park for walking, fishing, bicycling, etc. The Boston Harbor Islands State Park had 27,288 visitors of which 22,284 were transported on DEM funded water taxis. Ninety six subsidized transportation permits were issued to non-profit groups for island trips, accounting for 3,849 people. Webb State Park had 41,175 visitors. Approximately 400,000 people either took the commuter boat from DEM property in Hingham or attended programs in DEM owned buildings, (Henly and SSARC) at Webb State Park.

Exhibits

Exhibits were the main topic of the June 6th Bureau staff meeting. Discussions centered around the need to make exhibits more dynamic and change themes as often as possible. Regional themes were suggested as a logical next step - each Heritage Park would become a center of information and history for a particular region. Meanwhile, at least 40 changing exhibits were produced during the year to complement the permanent exhibits. North Adams featured several exhibits ranging from quilts by local quilt makers, to Afro American cultural exhibits. Lynn Heritage State Park staged a local high school art contest and Fall River had an exhibit on endangered species and Commonwealth Museum exhibit entitled "Birds Eye View of Massachusetts". A few exhibits, "Perfect in Her Place", a Smithsonian traveling exhibit, and "Remaking America", toured all the parks.

Programs

Special programs account for much staff time and incorporate local residents and community groups. Each park has become noted for one large event such as "Fall River Celebrates America", "Celebrate Holyoke", Lawrence's "Bread and Roses Festival", Lynn's "Harbor Monster Day", Gardner's "Lumberjack Festival", or Lowell's "Folk Festival". These programs impact the park grounds, park staff and park budgets. Other special programs include an "Integrated Theater" in Lawrence where people with all levels of abilities work together to present performances such as "A Christmas Carol" and "Take Five". The North Shore Jewish Historical Society presented a program which highlighted the history of immigration to Lynn. Hundreds of smaller programs were produced and presented, both with and without DEM staff participation.

Recreation

Real trains, kiddy trains, paddle boats, harbor trips, sailing, canal tours, swimming; recreation is still the biggest Bureau of Urban Services attraction. Regular Saturday and Sunday rail trips to Holyoke and Westfield with special events such as murder mystery rides, a train robbery, and Halloween trips, were featured in the Holyoke Heritage State Park Railroad program. North Adams provides free rides on a miniature train on weekends. Paddle boats at Dunn Pond were managed by a concessionaire-a big success. The florist shop at the Lynn Waterfront sold advance tickets for the water taxi from Lynn. One small business helped another provide paid boat rides from Lynn to Georges Island. Sailing and rowing programs at Fall River, Lawrence, and Lowell made excellent use of water bodies unused during the last decade.

In conclusion, FY'90 was a relatively successful year for the Bureau of Urban Services. The newness of the Heritage Parks is fading, while acceptance by the local communities is increasing. Despite the cooperation of the Regional staff and the professionalism of the individual park employees, dwindling park staff and shrinking operating budgets were beginning to take their toll during FY 1990.

BUREAU OF FOREST DEVELOPMENT
ANNUAL ACCOMPLISHMENTS
FISCAL YEAR 1990

Thomas F. Quink, Chief Forester
Bureau of Forest Development
Division of Forests and Parks
Department of Environmental Management

INTRODUCTION

"Forest Stewardship" is a new program developed jointly by the U.S.D.A. Forest Service, State & Private Forestry and the National Association of State Foresters. Stewardship is the application of environmental and economic resource management principals to benefit current and future landowners and the public. It is a state-based landowner assistance program emphasizing non-commodity resource values as well as forest productivity.

Forests provide communities in Massachusetts with innumerable social, economic and ecological benefits. Productive forest lands are under pressure from development, due to a growing population and escalating land values. Forest lands, therefore, are becoming more fragmented and thus much more difficult to manage. By providing landowners with technical advice and potential for revenue, forest stewardship offers an attractive alternative to development.

The Forest Stewardship Program, very timely to Massachusetts, brings together both public and private organizations responsible for managing the non-industrial private forests (NIPF) in Massachusetts. The program addresses major matters such as clean water and air, global climate changes, preservation of wetlands and endangered species, forest growth and recreation. Agencies both State and Federal, concerned about forest resources, have an opportunity to work cooperatively to improve the state's quality of life and natural resources. Its success depends on the cooperation and committment of all public and private partners.

Laura Dooley
Service Forester

PRIVATE LAND MANAGEMENT

Service Forestry Overview

Assistance to the estimated 235,000 forest landowners in the Commonwealth is the responsibility of 14 Service Foresters in the Bureau. They cover the five regions of the Division of Forests and Parks. Although many of these landowners, an estimated 191,000, own 9 or fewer acres, the major portion (85%) of the forested land area in private ownership, 2,499,100 acres, is in larger holdings. It is primarily these 45,000 owners and the large forest area they own who are served by these foresters.

Service Foresters promote stewardship of forest land. This has been the goal of service forestry since its inception in 1950 and even back into the 1930's when "Farm Forestry" focused on privately owned farm woodlands.

Stewardship has taken on a more definitive meaning because of a federal initiative through the Forest Service, U.S.D.A., State and Private Forestry Branch which was implemented in 1990. Stewardship is defined as:"Applying environmental and economic resource principles to benefit current and future landowners and the public." Economic stewardship will attempt to increase rural economic stability and diversity, improve land and resource values, increase resource productivity of private lands especially of fish, wildlife, recreation, and timber supply. In achieving these economic objectives, however, stewardship will emphasize investment in the environment by enhancing fish and wildlife habitat, improving air quality, preserving natural settings and biological diversity and improving water quality and reducing soil erosion.

Service Foresters are well qualified professional foresters who will have primary responsibility of achieving these objectives in Massachusetts by carrying on and advancing past programs. A summary of the Massachusetts program is included in this report. Massachusetts laws assist foresters in achieving some of these objectives and, over the past year, training has enhanced their knowledge, and that of loggers and landowners, about the laws and their implications for forest management. Wetlands protection is a major concern of Service Foresters particularly in overseeing the Forest Cutting Practices Act (Chap. 132, Secs. 40-46). Workshops on Best Management Practices (BMP) were conducted based on a handbook prepared by David Kittredge, Extension Forester, University of Massachusetts, and Michael Parker, Service Forester. The handbook has been widely distributed to loggers and landowners. Vernal pools, a particular form of wetland, have received focus this year as a part of training. The GEIR being prepared for MEPA by the DEM places major emphasis on forest practices in relation to wetlands.

Education of landowners is a main emphasis of the Service Forestry program and is accomplished through meetings, one on one contact with forest owners, approval of ASCS forest practices, Forest Tax Laws (Chap. 61 & 61A) forest management plans, and Forest Cutting Practices Act timber harvesting plans. Reports of these three specific activities prepared by the respective state-wide coordinators follow in this report. The 20th anniversary of "Earth Day" provided a focus for activities to promote forest stewardship and to point out the environmental importance of forests.

he annual celebration in the Commonwealth of"National Forest Products eek" in mid-October was another activity to which many of the DEM oresters contributed and it provided an opportunity to highlight assachusetts' forest industry. Participation by nearly all of the ureau's foresters as inspectors in the Tree Farm program is another ritical means of educating landowners and, through exhibits and public vents, the general public about the importance of forest management in he Commonwealth.

he other activities in which the Service Foresters participated hroughout the year are too numerous to detail in this report. They help orest landowners, municipal authorities, and organized groups in many ays but they cannot provide all of the services needed by the large umber of forest owners. Therefore, they are a source of information about rivate consulting foresters who can work directly for the landowner to elp him or her achieve their forest management objectives.

orest Cutting Practices Act

iscal Year 1990 saw some further improvements to the Cutting Practices rogram. First among these was the publishing of the "Massachusetts Best anagement Practices Timber Harvesting Water Quality Handbook". Authored y Service Forester Michael Parker and Extension Forester David Kittredge, he handbook contains the standards required by the "Minimum Forest utting Regulations (3.04 CMR 11.00) for logging and skid road onstruction, maintainence and stabilization, including treatment of treams and other wetland areas.

he handbook was mailed to each licensed timber harvester. One day ntensive training sessions were also held across the state for loggers, oresters, and landowners to introduce and reinforce these principles.

nother improvement was the expansion of Anne Marie Loud's (RC&D Forester) h. 132 database to include all approved cutting plans statewide. A copy f the first page of each approved cutting plan is sent to Anne-Marie for ntry in the database. This allows us access to cutting plan data such as creage or volume cut or landowner information on a statewide, county or own basis. Anne Marie also maintains the harvesting license database and rovides up to date lists of license holders for all Ch. 132 field ersonnel.

n order to address changes in the Wetlands Protection Act and Regulations EM intiated the process for updating the 1984 DEM/DEQE (now DEP) emorandum of Understanding (MOU). This document outlines the conditions nder which permitted logging operations are exempt from the Wetlands Act, nd also addresses the responsibilities of DEM, DEP, and the local onservation Commission in regards to logging conducted in and around etlands.

In early January Director Dane, Chief Forester Quink, DEM Counsel Graham, Ch. 132 Coordinator Smith and Wetlands Coordinator Parker met with Director Foote-Smith of the DEP Division of Wetlands Protection, and representatives from her program. A consensus was reached at that meeting, and over the next two months Joe Smith and a DEP lawyer drafted an acceptable version of the memorandum, which was then presented to DEP. Unfortunately DEP balked at signing the document, so that at this writing the original MOU is still in effect.

DEM however has made every effort to keep in step with the Wetlands Act. Several foresters attended a DEP workshop on Wetlands Delineation in the spring. We are planning other workshops of this type for DEM foresters in the next year and also hope to provide forestry training for DEP personnel.

Service Forester Richard Kulis also planned and implemented several workshops statewide to introduce to foresters, loggers and landowners the new wetlands regulations relative to rare and endangered species and to vernal pools. Not much is yet known about vernal pools so the timely presentation of these workshops put us on the cutting edge of this new field.

On the legal front, charges were brought against a Hampshire County landowner, his forester and the logging contractor, for failure to provide proper notice to abutting landowners and beginning a harvest before the ten day waiting period elapsed. Charges have since been dropped against the landowner and forester but the trial for the logger will be held in the fall.

A total of 572 Timber Harvester's Licenses were issued in FY'90, 70 of which were out-of-state businesses. This was a very slight increase over the number in FY'89, and provided $9630 to the General Fund in license fee receipts.

Logging activity increased in the number of plans approved by 7 percent from FY'89. In turn, there was a 4 percent growth in the acreage harvested with an equally proportional amount of increase in the amount of board footage cut. However, there was a major decrease in the number of cords harvested declining by 27 percent from the previous year's level of 69,247 cords, using a conversion of 2 tons per cord.

Joseph Smith
Service Forester
Chapter 132 Coordinator

Table 1 -- FY 1990 CUTTING PLANS BY DISTRICT

District	Approved	Acres	MBF	Cords
Plymouth, etc	12	349	208	579
Bristol	19	355	417	616
Norfolk	2	28	0	220
Essex	10	251	372	691
Middlesex	50	1,217	3,271	2,270
N. Worcester	77	2,807	4,421	5,978
C. Worcester	73	2,878	5,741	10,267
S. Worcester	35	1,201	1,462	2,625
E. Franklin	53	1,667	3,418	3.222
W. Franklin	56	1,973	3,850	2,977
Hampshire	78	3,250	6,978	5,873
Hampden	76	4,593	7,173	5,272
N. Berkshire	24	1,312	2,158	1,423
S. Berkshire	45	2,223	5,319	6,905
TOTAL	610	24,104	44,788	48918

Forest Tax Law / Farmland Assessment (Chapters 61 and 61A)

FY90 showed an increase in the number of new applications for Chapter 61 for the second year after four years of decline in new applications. Chapter 61A applications declined in FY 90 after showing a substantial increase the previous year.

During FY 90, 172 new applications/management plans containing a total of 16,295 acres were processed into the Chapter 61 program. This represents a 15.4% increase in the number of plans submitted from FY89. A total of 32 new application/management plans covering 3,016 acres were processed into the Chapter 61A program.

There was an increase in the total number of Chapter 61 and 61A management plans and acres under management in the state for the third consecutive year. Chapter 61 increased 6.0% in the number of acres and 3.9% in the number of plans over the FY'89 figures. Chapter 61A increased 25.2% in the number of acres and 13.3% in plans.

A number of amendments to change Chapter 61 and 61A were proposed during FY'90. The Senate Taxation Committee submitted amendments to Section 8 of Chapter 61 which concerns the rights of cities and towns to purchase land which is to be removed from Chapter 61 classification. The proposed changes are still pending.

The public information program for Chapter 61 and 61A was expanded during FY90. Programs were held in all areas of the state to provide landowners and public officials with up-to-date information. A pilot program in cooperation with the Pilgrim RC&D and the Cape Cod Cranberry Growers Association to interest cranberry growers in Chapter 61 and 61A participation was started in FY90 and contributed to the increase in new applications in that region.

John L. Clement
Service Forester
Ch. 61,61A Coordinator

Table 2 --ACREAGE AND NUMBER OF PLANS BY COUNTY FOR FORESTED CHAPTER 61 AND CHAPTER 61A AS OF DECEMBER 31, 1989

	CHAPTER 61		CHAPTER 61A		Total	Total
ounty	#Acres	#Plans	#Acres	#Plans	#Acres	#Plans
RANKLIN	45,703.5	539	6,120.5	46	6,120.5	585
ORCESTER	47,454.1	661	2,280.4	42	49,734.5	709
ERKSHIRE	33,013.1	312	1,114.5	11	34,127.6	323
AMPSHIRE	30,204.1	403	1,407.0	14	31,611.1	417
LYMOUTH	22,965.1	247	1515.7	34	24,480.8	281
AMPDEN	22,962.9	249	1,317.8	13	24,280.7	262
IDDLESEX	13,311.0	298	1301.5	29	14,612.5	327
RISTOL	10,622.4	116	921.0	11	11,543.4	127
SSEX	3,931.3	92	737.2	17	4,668.5	109
RFOLK	3,458.8	97	545.1	12	4,003.9	109
RNSTABLE	177.5	10	44.4	1	221.9	11
KES	144.6	4	0.0	0	144.6	4
NTUCKET	0.0	0	0.0	0	0.0	0
TALS	17,305.1	230	233,948.4	230	251,253.5	3,264

Agricultural Stabilization and Conservation Service (ASCS) Forestry Programs

Forestry Incentives Program (FIP)

The Massachusetts FIP allocation for Federal Fiscal 1989 was $119,355, a very slight decrease (0.5%) from $120,022 for 1988. Of the 10 FIP counties, 5 of the most heavily forested were allocated 89% of the total: Berkshire (11%), Franklin (14%), Hampshire (18%), Plymouth (30%), and Worcester (16%). These same 5 counties held 80% of the total allocation for 1988.

The 968 acres treated is a slight increase (3.2%) from 938 acres for last year; 846 acres (87%) were treated in the 5 counties named above. As in previous years, the vast majority of acres treated were for Timber Stand Improvement (893 acres, 92%). See Table 3 under FIP for a further description of county activities.

Agricultural Conservation Program (ACP)

The forestry portion of Massachusetts' ACP consists of tree planting (FR-1) and timber stand improvement (FR-2) on lands ineligible for FIP, and of special practices (SP-38: fuelwood thinning; SP-44: forest management planning) which are not available under FIP. Total 1989 cost-shares for these practices were $82,404, a 128.6% increase in overall ACP distributions, attributable to the continued active interest shown in SP-44. During 1989, this practice was utilized by 103 particpants (82% of total forestry applications), with cost-shares of $64,108 (78%) on 14,150 acres (98%). Acres served under this practice have increased rapidly since its introduction in 1986 (1986: 822 acres; 1987: 4,040 acres; 1988: 8,399 acres;), and now makes up 46.2% of the total for all ACP practices. Franklin led all counties with 7,205 acres (31% of total), easily outdistancing second place Worcester's 1,858 acres.

Of the 357 acres treated under the remaining ACP practices, 301 acres (84%) were for timber stand improvement, led by Hampshire (88 acres) and Berkshire (70 acres). Plymouth County had the lone remaining fuelwood thinning practice (17 acres), while Bristol County led the way in planting with 21 acres. See Table 3 for a further description of county activities.

Tree Assistance Program (TAP)

In response to drought conditions during 1988, the USDA established this program to cost-share the replacement of tree seedlings planted during 1987 and 1988. Beacuse drought conditions were less severe,and there was a lack of large scale tree planting projects in Massachusetts, applications for assistance were relatively light. During 1989, 11 landowners received cost-share assistance on 23 acres under this program.

Robert S. Lear
Service Forester

Table 3 --FY 1990 A.S.C.S. FORESTRY PROGRAMS BY COUNTY

ounty	Planting (acres)	T.S.I. (acres)	Fuelwood (acres)	Planning (acres)	Practices (number)
arnstable	1	4	-	-	3
erkshire	8	224	-	1,284	25
ristol	30	40	-	523	15
ukes	-	-	-	-	-
ssex	-	14	-	-	1
ranklin	9	191	-	7,205	50
ampden	-	90	-	668	7
ampshire	-	179	-	777	17
iddlesex	-	72	-	312	6
antucket	-	-	-	-	-
orfolk	1	19	-	323	4
lymouth	31	175	17	1,200	25
orcester	57	186	-	1,858	39
OTALS	137	1194	17	14,150	192

STATE FOREST MANAGEMENT

Management Forestry Overview

The majority of state-owned forest land is administered by the Bureau of Forest Development, Division of Forests and Parks. These lands are referred to as State Forests and are divided into eight districts for administrative purposes with a forester and assistant in each one. (During FY90, the mid-state district Assistant Management Forester was reassigned to Region 4.) The latest Forest Survey by the Forest Service, U.S.D.A., estimates 430.4 thousand acres of the Commonwealth is in public ownership or 14.7% of all forested timberland (2,929.4 thousand acres). In addition to timberland forests, that which is capable of producing a timber crop (more than 20 cu. ft./acre/Yr.) there is an additional forest area of 295.8 thousand acres in unproductive, productive reserved, and urban forest classification. State Forests are approximately 263 thousand acres and classed as timberland, although under the G.O.A.L.S. management policy this acreage would be reduced because some of it would fall into the productive reserved or unproductive forest classifications.

The State Forests of Massachusetts are conservativley managed and are, therefore, accumulating a substantial volume of timber. Statistics in the Forest Service inventory do not exist separately for the Commonwealth's various public ownerships. However, these forests in total showed increased timber volumes and, because State Forests comprise approximately 60 percent of public holdings, the increases for the total are representative of the State Forests.

Between 1972 and 1985 cubic foot volume increased from 514.3 to 718.0 (39.6 % increase) with hardwoods showing greater proportional increase (63.9%) than softwood (9.9%). If heavy cutting were taking place a decline would be expected, especially of board foot volume which considers only trees of sawtimber size -- 9"DBH for softwoods and 11" DBH for hardwoods. To the contrary, hardwood sawtimber volume increased from its base in 1972 by 166% and softwood volume by 35% with the total sawtimber resource of all Commonwealth-owned public forests increasing by 80% over the thirteen-year period.

The basic timber management policy on State Forests is for long rotations, striving for large, quality sawlogs at time of harvest. This policy derives from the view that State Forests serve to provide a multiplicity of benefits and therefore are managed with all uses in mind -- water, wildlife, recreation, timber, and environmental quality and biological diversity.

On the average, each Management Forester Team (forester & assistant) is responsible for approximately 33 thousand acres. They carry out a variety of activities mostly, but not exclusively, confined to the State Forests. As do the Service Foresters, Management Foresters participate in educational programs. This past year special programs were conducted during Forest Products Week in October and for Earth Day in April, 1990. They present programs to school children and teachers either on the Forests or in classrooms. Participation at county fairs and at the Big E during fiscal 1990 supported activities of the MA Tree Farm Committee, MA Christmas Tree Growers Assoc. and the MA Wood Producers Association.

Management Foresters are principally involved with forest planning under the G.O.A.L.S. guidelines and carrying out the on-the-ground management activities. These activities are reflected in the following sections covering timber and fuelwood sales, boundary maintenance, and timber stand improvement. Some of these activities entail extensive office work, as in the case of boundary establishment where there is a need to do deed research. Management Foresters oversee the major income generating activity within the Bureau of Forest Development,i.e., sale of sawtimber, pulpwood, fuelwood, and biomass.

Standing Timber Sales

Commercial Sawtimber and Pulpwood/Biomass Table 4 is a compilation of sales by Forest Management Districts for all State Forests. The board foot volume in FY 1990 is down slightly from FY'89 -- 3,434.26 MBF vs. 3,898.6 MBF. Timber marked in FY'90 in the Northern Berkshire District was not sold until FY 1991 which, if included, would make the board foot volume nearly equal. A comparison of the pulpwood cord and biomass volumes/weights show substantial increases over FY'89 from 2,020 to 3,407 cords and 3,554 to 7,601 tons. These latter are low valued products and provide only a small portion of the total stumpage receipts. Sales of biomass for energy production are restricted to the Northeastern and Southeastern Districts which have been able to conduct forest improvement cuts because of the nearness of the markets for this product in New Hampshire and Maine, and because land clearing has declined and contractors doing that work are seeking alternatives for the use of their equipment.

A significant reduction in revenue from commercial sawtimber and pulpwood/biomass sales Occurred in FY'90 compared to FY'89. This is the first year since 1986 that this revenue has dropped below a half-million dollars. Dollar revenues were at $359,435 in FY'90 a decline of 36 percent from $565,241 in FY'89. Several factors may be responsible for the decline in revenues. Foremost is the poor lumber market, thus lowering the price being paid for stumpage. The lower board foot volume had some impact, although the Northern Berkshire timber sale marked in FY'90 and not sold until FY'91 would have added little because it was low-valued spruce. Of the 442.5 MBF and 1,226 cords marked in three sales, only 322.4 MBF and 806 cords were sold, grossing $21,894 in revenue and services. Each year, although revenues may remain relatively constant, the species quality and accessibility of timber sold may affect price, thereby reducing or increasing revenues. An increased proportional volume of biomass and pulpwood, lower valued products compared to sawlogs, also contributed to the decline in the FY'90 revenues.

Commercial and Home Fuelwood Sales

Sales of fuelwood in FY'90 declined in both the commercial and home fuelwood categories compared to FY'89. The 1,262 cords (conversions of 500 BF / cord) of commercial fuelwood in FY'90 is 36% less than the 1,969 cords harvested in FY'89. Home fuelwood sales declined by 21% from 417 cords to 331 cords in FY'90. Declining fuelwood sales can be attributed to the relatively lower cost of alternative heating fuels. There was, however, an increse in oil costs because of a severe December cold snap. This short-run phenomena did not impact the demand for fuelwood stumpage from State Forests. A surplus of marked fuelwood stumpage had been made available for sale over that which was harvested --commercial sales, 150 cords and home fuelwood, 573 cords. The lack of buyers for this available wood is a further indication of the low demand for this energy resource in FY'90. As the FY'91 year begins, developments in the Middle East have created large increases in oil costs and it is anticiapated that fuelwood demand will follow.

Because volumes of fuelwood were down, so were the revenues from it. However, the average stumpage price per cord for commercial sales increased from $10.69 per cord in FY'89 to $13.05 per cord in FY'90. The average price received for home fuelwood stumpage declined slightly but at $16.04 per cord was higher than the average price paid for commercial sales.

oundary Re-establishment and Timber Stand Improvement

oundary re-establishment was done on 86 miles of line. This is an mportant activity of Management Foresters in order to deter trespass on h State Forests. Timber stand improvement is a silvicultural practice to chieve one of the goals in managing State Forests, i.e., improving the omposition and quality of the timber resource. The amount of TSI work hat can be accomplished is limited by budget constraints and often can nly be done when timber sales are made. The 573.4 acres done in FY'90 is n understatement of the actual acres improved because sawtimber, ulpwood, and biomass harvest cuts often achieve timber stand improvement ut are not classified as such in the statistical reports.

oad building is not a major activity on State Forests and is generally ccomplished in conjunction with timber sales. Accessibility to some orest stands requires road building, particularly in Berkshire County, here the 3.0 miles of road were built in FY'90. Road maintenance is the esponsibility of Forest and Park Supervisors and generally takes the form f mowing, brushing, and grading. Road maintenance activities are mportant, especially for fire protection, but are not at the level they hould be because of limited personnel and budgets.

Table 4 -- COMMERCIAL SAWTIMBER AND PULPWOOD/BIOMASS SALES FY 1990

istrict	Revenues Committed	M.B.F.	Cords/Tons	Acres
outheast(a)	$11,897.62	53.42	--/6,648.31	182.6
ortheast(b)	$23,403.00	337.22	-- / 953.00	88.0
id-State(c)	$32,077.00	223.00	1175/ --	127.0
. Conn. Valley(d)	$29,002.47	933.40	960/ --	350.0
. Conn. Valley(e)	$21,956.00	235.11	228/ --	59.3
.Berkshire	--	--	--	--
. Berkshire	$112,977.60	832.98	53/ --	208.0
. Berkshire	$128,121.30	819.13	991/ --	319.0
OTAL	$359,434.99	3,434.26	3,407.3/7601.3	1,333.9

(a) Includes 32,065 BF valued at $1,603.25 for in-house use.
(b) Additional volumes were 16MBF of oak sawlogs to Warwick Prison Camp and 12MBF of pine sawn for in-house use from J. Harry Rich S.F.
(c) This revenue includes $1,112.16 from the sale of witch hazel brush from the Douglas S.F.
(d) Includes $19,640 in services.
(e) Includes $1,738 in road building.

Table 5 -- STATE FOREST FUELWOOD SALES, FY 1990

	Home Fuelwood				Commercial Fuelwood		
District	Revenue	Cords	Lots	Acres	Revenue	Cords	Acres
Southeast	$1,186.59	58.7	15	15	$ 300.00	46	8.4
Northeast	$3,037.45	190.0	34	38	$1,125.00	60	20.0
Mid-State	$ 598.63	41.0	11	18	$3,570.00	317	46.0
E.Conn.Valley	$ 481.87	41	5	24	$4,510.85	488(a)	50.6
W.Conn.Valley	--	--	-	-	$6,987.65	351(b)	52.5
N.Berkshire	--	--	-	-	--	--	--
C. Berkshire	--	--	-	-	--	--	--
S. Berkshire	--	--	-	-	--	--	--
TOTAL	$5,304.54	330.7	65	95	$16,493.50	1262	177.5

(a) 64,130 BF converted to cords using 500 Bf per cord.
(b) 19,055 BF converted to cords using 500 BF per cord.

Table 6 -- STATE FOREST BOUNDARIES RE-ESTABLISHED AND TIMBER STAND IMPROVEMENT, FY 1990

District	Boundaries Re-established	T.S.I. Acres
Southeast	5.6 Miles	182.4
Northeast	2.5	40.0
Mid-State	18.0	158.0
E. Conn. Valley	6.8	149.0
W. Conn. Valley	17.0	37.0
N. Berkshire	10.5	7.0
C. Berkshire	17.5	--
S. Berkshire	8.1	--
TOTAL	86.0	573.4

OREST PRODUCTS MARKETING AND UTILIZATION

he Forest Products Marketing and Utilization Program provides information nd assistance to industry and landowners about the Commonwealth's forest esources and markets for a broad range of products, from standing timber o finished funiture.

he program has a staff of 3 persons including the FPM&U Coordinator, Doug eab, M&U Forester Robert Bond, and RC&D Forester Anne Marie Loud whose ctivities are covered seperately.

he staff works closely with a number of local and regional industry roups including both chapters of the Massachusetts Wood Producers ssociation, the Northeast Lumber Manufacturers Association, Wood Products anufacturers Association and Massachusetts Christmas Tree Association.

WMILL DIRECTORY

major focus of the program in FY'90 was collecting information for an dated Massachusetts Sawmill Directory which will be printed and istributed in FY'91. Results of the survey show that 35 mills produce ver 1MM board feet annually and that the 14 largest mills produce about % of the Commonwealth's total annual production of nearly 105MM board et. Production is almost evenly split between softwood and hardwood ecies.

ese figures reflect an increased emphasis on hardwood production as ese markets have improved in recent years from increased domestic and reign demand.

MBER MARKETING SURVEY

conjunction with the Directory update, a survey was made of lumber rketing by sawmills. The results show that nearly all hardwood oduction was sold through brokers or wholesale outlets, while at least % of softwood production is sold retail through direct sales from the ll. These figures reflect the dominance of many small producers of stern White Pine and its direct use by consumers as opposed to the rther processing charcteristic of hardwood products. The survey also nfirms the lack of "value-added" processing in the Commonwealth's imary industry.

EXPORT CONFERENCE

In cooperation with the Northeast Wood Product Exposition and Co-operative Extension in New Hampshire the staff coordinated a conference on "World Markets for Northeastern Wood Products in Durham, NH. The conference featured speakers with expertise on exporting a variety of wood products, from chips to furniture, to markets in the Pacific Rim and Europe. A total of 55 representatives from forest industry throughout New England attended the day-long session and at least one company has since begun exporting lumber to Spain as a result of information gained at the conference. Publicity from the conference interested additional manufacturers in Massachusetts to seek assistance in developing export markets for their products.

NEWPEX

The staff continues to be heavily involved in the production of the Northeast Wood Products Exposition trade show. Exhibits by DEM and the Massachusetts Wood Producers Association were prepared for the 1990 show in Hershey, Pennsylvania and represented a number of small wood products firms at the show. Information about these and other potential Massachusetts wood product suppliers was provided to the over 1000 attendees in Hershey. In 1991 the show will be located in Pittsburgh, PA and plans are to provide exhibit space for up to five Massachusetts producers to have their own company exhibits. The NEWPEX show is also expanding its focus on foreign markets by working to bring organized foreign trade delegations directly to the show floor.

WOOD ENERGY

A step towards developing an in-state market for commercial wood energy was taken when Kennetech Energy Systems announced plans for a 16MW wood-fueled power plant in Westminster. The facility would utilize about 125,000 tons of chips per year and when placed on line would be the largest user of energy quality chips in the state. It is expected that the plant will use some whole-tree chips produced from forestry operations although the dominant supply will come from sawmill residues and recycled pallets. At the same time the proposed Killingly, CT wood energy plant is moving closer to construction and will provide additional demand for forestry chips when completed. A renewed interest in residential fuelwood also occurred as a result of the temporary fossil fuel price increase in December of 1989, and the Middle East crisis in the summer of 1990. It is hoped that this combination of factors will provide improved markets for low quality materials produced from thinning operations in the Commonwealth.

ULPWOOD

arkets for roundwood pulp have continued to improve as mills in Northern ew England look south for increased fiber supplies. Forest Service tatistics show a 500% increase in roundwood pulp shipments from assachusetts between 1980 and 1988. At least one company is now willing o pick up roadside pulp from the central and eastern areas of the state. his market has provided additional opportunities for improvement work on tate and private lands.

ISCELLANEOUS

ther projects have included completion of a Sawmill Improvement Program nalysis of one mill in Worcester County and scheduling of a second in ampshire County. The Massachusetts Christmas Tree Association received a ost-share grant to produce an improved marketing brochure listing retail nd wholesale suppliers of Massachusetts' grown Christmas Trees. Under the uspices of the Yankee Forest Project the staff, and Management Forester huck Pernaa coordinated a log-bucking workshop on Mt. Wachusett S.F. ttended by about 45 loggers and foresters.

Doug Leab
Forest Products Marketing &
Utilization Coordinator

ERKSHIRE-PIONEER RC&D

his RC&D program has a focused effort to promote technical advances and rovide support for the wood products industry located in the four rural estern counties of Massachusetts (Franklin, Hampshire, Hampden, and erkshire). The following narrative outlines current RC&D projects onducted during FY'90 by the RC&D Forester, Anne Marie Loud, in ooperation with many other DEM personnel, Extension Forester, David ittredge, Jr., and the Massachusetts Wood Producer Association. Many rograms were planned and implemented to create a positive image of the orest products industry and enhance public awareness of the value of all assachusetts' forest resources. Among these were the 1989 Forest Products eek (FPW) efforts focused on improving the geographic distribution of the 0 FPW events, expanding publicity to include Public Service Announcements nd establishing one event with large audience potential as a "Kick-off" nd focus for the week of activities. As a result, the Gardner Heritage tate Park LUMBERJACK FESTIVAL has become an annual event and Anne Marie ontinues to provide support and guidance.

n addition to these events, the Massachusetts Wood Producers Association as assisted with their presentation of the 1989 NORTHEAST LUMBERJACK HAMPIONSHIPS at Greenfield, September 1989 and with the planning and resentation of the 1990 NORTHEAST LUMBERJACK CHAMPIONSHIPS in Northampton n August 1990. The public interest and subsequent press coverage of this ompetiton provides a great opportunity for the presentation of various ndustry messages and the gradual improvement in the society's attitude oward the forest resource and the forest products industry.

In addition, Earth Day in April presented a once in a lifetime opportunity to present a concise forest stewardship message to an eager public. Anne Marie and Extension Forester, David Kittredge developed an Earth Day exhibit for the Society of American Foresters, Yankee Division, and brought it to the New England Environmental Conference (attendence 5000) and to the Boston Esplanade (attendance 225,000) as well as a number of small Western Massachusetts events.

Distribution of the quarterly stumpage price survey forms to foresters and wood producers is done in coordination with extension and state forestry agency staff in Connecticut, Massachusetts and Rhode Island. Once summarized, Anne Marie distributes the quarterly stumpage price summaries. This Southern New England team also produced and printed the (2nd) Southern New England Annual Forest Market Report. The report is written for and distributed to landowners. This market report contains market price and trend information on stumpage, Christmas trees, maple syrup, export opportunities, pulp and information on other current market opportunites.

Several database files are maintained at the Berkshire Pioneer RC&D office. Data from all Ch. 132 plans is complete for FY90. In addition, information from timber harvesting license applications is entered into a database which is compatible with a nationwide format (FIND), and will be used to generate primary directories. This information is currently used to generate labels for industry mailings, and Harvester License lists for Ch. 132 coordinators, Service Foresters and Bureau of Fire Control Personnel. Other database files have been created and two are used for the following newsletter mail lists: The Wood Product Times, MWPA Newsletter.

In response to funding and staff reductions, Anne Marie assisted the Forest Planner, Muriel More, throughout FY90 with word processing and other processing details involved in the production of the GEIR.

She also assisted Bureau and Extension staff with planning and preparing a series of Best Management Practices Workshops, Vernal Pool and Endangered Species Workshops and is currently cooperating with a team in developing a series of logger training sessions that will emphasize aesthetics, ecology, silviculture and current environmental issues.

Anne Marie Loud
RC&D, Forester

FOREST RESOURCES PLANNING PROGRAM

The primary goal of the program is to prepare, implement and update the Massachusetts Forest Resources Plan. This plan provides policy and program direction for the Division of Forests and Parks and also the Commonwealth's portion of the Federal Forest and Rangeland Renewable Resources Planning Act (RPA) efforts. The program is directed by Dr. Muriel E. More.

During FY'90 program efforts focused on completing the Division's Generic Environmental Impact Report (GEIR) on forest land management practices. According to the Massachusetts Environmental Policy Act (MEPA) regulations, the Division must periodically update its GEIR of forest practices on Division lands. While past GEIR's have dealt only with forest management practices on Division properties, the current effort is also examining the impacts of timber harvesting on water quality. The Draft GEIR is scheduled for submission to MEPA in October 1990. Major program highlights during the fiscal year included completing and circulating the Draft GEIR for GEIR Technical Advisory Committee (TAC) and DEM review. (MEPA established the 15 member TAC in 1987 to assist the Division in preparing the GEIR.) Major program emphasis in FY'91 will focus on submitting the Draft GEIR to MEPA for public review and preparing the Final GEIR for submission to MEPA based on the review comments.

n November, 1988, James Soper, Service Forester, was temporarily assigned o the Forest Resources Planning Program to work full-time on the GEIR. During the fiscal year, Mr. Soper has made substantial contributions in research and writing on the Draft GEIR and also assisted in coordinating meetings of the GEIR Technical Advisory Committee.

Muriel E. More
Forest Resources Planner

OTHER PROJECTS AND NEWS

FOREST STEWARDSHIP PROGRAM

In FY'90 the Forest Service, U.S.D.A., State and Private Forestry, initiated the Forest Stewardship Program established by the Federal government. The Bureau of Forest Development has been assigned the responsibility of coordinating it in Massachusetts.

> "The philosophy of the Stewardship Program is: to insure that landowners apply economic resource management principles to benefit themselves, future landowners and the public."

The Stewardship Program is tentatively scheduled for 5 years by the Forest Service. Funding for each of the five years will be based upon the funds made available through the annual Federal budget process. Funding for FY'90 was 55 thousand dollars.

To date the Massachusetts Forest Stewardship Program:

-- has been developed. The plan was approved and signed by all members of the Massachusetts Forest Stewardship Committee. Committee members are cooperating in the implementation of the program. Members of the committee were selected to represent fish and wildlife, recreation and aesthetics, soil and water, and forest products. Each of these resource values are important components of the Massachusetts Forest Stewardship Program.

-- developed a publication titled "Tax Incentive and Assistance Programs for Owneres of Forest Land." The publication was written by DEM Service Foresters Robert Lear and John Clement. It is a compilation of all state and federal programs available in Massachusetts to private woodland owners. It includes information on M.G.L. Chapter 61 (Classsification and Taxation of Forest Land and Forest Products) and A.S.C.S. (Agricultural Stabilization and Conservation Service) federal cost-share programs, such as Forest Improvement Program (FIP) and the Agricultural Conservation Program (ACP) practices, to name just two.

--continued to support training for loggers, foresters,and other resource professionals. Two such training sessions were held this year at various locations across the state. A Best Management Practices (BMP) workshop was held in November and Vernal Pool workshop was held in April.

--is co-sponsoring the COVERTS Project to be held in the fall 1990 at the Harvard Forest, Petersham, MA. "The purpose of the COVERTS project is to improve wildlife habitat through sound forest management practices." Woodland owners participating in the three-day workshop will learn about forest management practices that relate to improving wildlife habitat and other forest resource values. In turn, these forest land owners will pass this knowledge along to other owners in their communities.

Michael J. Fleming
Service Forester and
Forest Stewardship Program
Coordinator

ILGRIM RC&D

his program completed its first of a planned two-year duration with many ctivities to report. The program is supported with funds from the Forest ervice, U.S.D.A., Massachusetts DEM, and the Cape Cod Cranberry Growers' ssociation. It is devoted to expanding, retaining, and managing forest and in the southeastern part of the Commonwealth through landowner ducation and white pine market improvement.

usan Campbell, RC&D Forester, with the help of John Clement, Plymouth ounty Service Forester, and others organized four workshops which focused n the Chapter 61, Forest Tax Law. For two of these workshops, a tax xpert took a case study approach, showing both federal and local property ax treatments on a "typical" cranbery grower's holdings, and then on a typical" forest land ownership.

he best attended workshop was co-sponsored by Middleboro's Natural esources Committee, a group concerned with escalating tax bills in its ecently re-evaluated town. The workshop was titled "Keeping Your Open paces Tax-Healthy: A Primer for Farmers and Landowners in Middleboro." he Natural Resources Committee determined the mailing list, which onsisted of townspeople who they felt should attend. The mailing went out o over 100 people and about 40 attended the session. This approach ppears to be worthwhile: find a local group who has direct interest in etaining forest and farm land and get them to invite the "right" folks. oresters can make sure a well-designed educational program conveys both echnical information and ideas ,about forest management'

usan also developed a slide show for local audiences about eastern white ine management. It includes some technical information on pine management nd a broad look at past, present, and potential choices society has made bout its use. The slide show has been shown to cranberry growers, the eneral public, and the Massachusetts Wood Producers. It is available for se by others.

During early summer 1990, a 4-page, 2-color handout was printed called "Forestry in the Cranberry Region." This piece was written to present a rationale to landowners favoring forest management, an idea of the many values to manage for, some specific examples of how management techniques improve the forest for certain uses, and reasons for involving foresters in the process.

Landowner education for the upcoming year will entail a wildlife habitat management program for the cranberry growers, a subject about which they are eager to learn. If towns express interest, Chapter 61 workshops will also be organized.

With depressed pine markets in the southeast, it has been important not to ignore the market side of the equation. Susan has been active in the Eastern Chapter of the Massachusetts Wood Producers Association. In April she helped staff the two NEWPEX booths from Massachusetts, one of which featured white pine.

Other marketing opportunities which merited pursuit cropped up during the year. For instance, a mailing was sent out to town officials in the southeast, announcing the Forest Service's Timber Bridge Initiative and the funds that are available to construct demonstration bridges. Several towns expressed interest, but none could wrest the money from the shrinking town budgets. Although the local situation is worsening, another year of funding may produce a bridge proposal from the region.

The Massachusetts Turnpike Authority plans to build some pilot sound barriers along the Pike. Susan has communicated with the Authority about the possibility of using local wood, if some of the barriers are to be made of wood. More work will be done on this effort in the fall of 1990.

Other plans for the second year of the Pilgrim RC&D Forestry Program include a resource inventory and market research for the southeast, from which a sawmill feasibility study can be derived.

Susan Campbell
RC&D Forester

YANKEE FOREST COOPERATIVE PROJECT

This cooperative has completed three years of operation supported by a "Focused Funding" grant from the U.S.D.A., Forest Service, Norhteast Area, State and Private Forestry to the three cooperating southern New England states. Rex Baker continued to serve as the Project Forester during FY'90 and received cooperation from a forester from each state. Richard Johnson, Southern Worcester County Service Forester, was the Massachusetts representative.

The program continued assistance to forest landowners and Tree Farm inspections. It provided management planning advice for two municipal watersheds. Two school presentations, 2 news releases and two publications were completed during the fiscal year. One publication was a reprint --"Homeowners Guide to Beautiful,Safe and HealthyTrees" -- while the other was a new brochure entitled "Protecting Shade Trees During House Construction."

Several workshops were conducted. A sawmill demonstration was held for Connecticut loggers, a hazardous tree workshop in Providence, RI, and three Log Bucking Workshops, one in each state. Seven thousand white pine seedlings were planted on ten acres of the Douglas State Forest to demonstrate forest conversion. Gypsy moth plot data were remeasured on plots established to monitor this insect's activity.

A primary effort of the YFCP in FY'90 was assisting in the establishment of a Rhode Island Landowners Association. A number of organizational meetings were held to form it and it is now a functioning organization.

A major long-term goal of the YFCP was to become a private non-profit organization. During the fiscal year a proposal for incorporation was repared and submitted to the Rhode Island Attorney General. It was ccepted and the Yankee Forest Cooperative Project is now incorporated in Rhode Island as the "Southern New England Forest Consortium" (SNEFC). The governing board is currently soliciting applications for a public elations/media specialist

Richard Johnson
Service Forester
YFCP Coordinator

NEW ENGLAND FOREST HEALTH MONITORING

Overview

Acid deposition research in Massachusetts has evolved into a more comprehensive program of forest health monitoring. In the spring of 1990, DEM became a partner in a national effort to track long-term trends in the health and productivity of forest ecosystems in the United States. The program addresses forest health concerns relative to the effects of naturally occuring factors such as fire, insect and disease pests, and drought, and unnatural biotic and abiotic factors such as introduced pests, air pollution, acid deposition, and global warming. Although new procedures were developed to help describe forest condition, every effort is being made to integrate "new" data with ongoing state and federal forestry programs (e.g. aerial pest surveys). The program is entitled the New England Forest Health Monitoring Project and is currently co-managed by USDA, Forest Service personnel, Robert T. Brooks and Margaret Miller-Weeks.

Accomplishments

Thomas Quink, Chief Forester, serves on the Executive Steering Committee for the Project while William Rivers, Management Forester, James MacArthur, Bureau Chief, Shade Tree Management and Pest Control, and Dr. Gretchen Smith serve on the Technical Advisory Committee. Project coordination at the state level is overseen by Gretchen, with field assistance provided by the District Supervisors, Bureau of Shade Tree Management and Pest Control. Charlie Burnham, Russell Larson, and Joseph Lokitis were responsible for implementing the bulk of the field-data collection procedures. A total of 32 plots were established in Massachusetts this year. At each 1-acre plot information was collected on site and stand characteristics and tree condition. Plants known to be sensitive to air pollutants were evaluated for foliar injury. Next year, additional information will be collected on foliage and soil chemistry. Data collected from each plot will be combined with the data from other plots in New England and a summary report compiled for distribution to forestry professionals and the public. Next year additional plots may be established following a needs assessment review by state forestry personnel

Study continues on red spruce decline in the Berkshires and sugar maple decline state-wide. Research under the direction of Gretchen Smith has established a significant decline in the condition of red spruce over a three-year period. Acid mist and ozone pollution are considered important contributing factors in this phenomenon. A third field season on sugar maple was completed and plans are in the works to publish a comprehensive report that would describe the current health of the maple forest today in Massachusetts. In the future, the red spruce and sugar maple plots will be incorporated into the network of forest health monitoring plots as part of the New England Project described above.

Dr. Gretchen Smith

REVENUE SUMMARY
BUREAU OF FOREST DEVELOPMENT

Revenues to the Bureau of Forest Development are derived from several sources. The major source is timber sales from State Forest lands. The figures in this tabulation include in-kind services in addition to cash receipts including road improvements, and timber stand improvement work done as part of a timber sale contract. Also included is the value of timber harvested for in-house use by DEM. Other sources of income listed include processing fees and those derived from federal grants.

State Forest and Service Forestry Income

Timber Harvester Licences	$9,630.00
Forest Product Sales	$381,233.03
Chapter 61 Filing Fees	$8,206.65
Rents/Leases	$20,448.50
	$419,518.18

Federal Grants

RC&D (Resource Conservation and Development	$17,000.00
RFA (Rural Forestry Assistance)	$11,993.00
Forest Stewardship	$55,000.00
Rural Development	$25,000.00
FIP (Forest Incentives Program	$4,069.00
ACP (Agricultrual Conservation Program)	$8,686.00
Yankee Forest Cooperative Project	$30,000.00
Southampton Rural Interaction Project	$25,000.00
	$159,765.00
Total	$579,283.18

ANNUAL REPORT

FISCAL YEAR - 1990

BUREAU OF FIRE CONTROL

PATSY G. BISCEGLIA, ACTING CHIEF FIRE WARDEN

INTRODUCTION

Due to budget restraints fiscal year 1990 has been a very challenging year for the Bureau of Fire Control. Promises of manning all our observation towers with seasonal personnel never materialized. Many tower positions were not filled. This put a strain on our permanent fire truckmen and patrolmen to man the towers during extreme fire danger periods. We were very fortunate to experience a fire season where precipitation at certain intervals abated any serious extended fire danger days.

The Bureau also experienced a unique situation with the retirement of the Chief Fire Warden, Four District Fire WArdens and Two Fire Patrolmen. There are 19 permanent fire positions which have not been filled because of a moratorium on hiring new personnel.

We continued our intensive training of Divisional personnel in hydraulics, water handling and fire behavior. Many of our personnel became "Red Carded" and qualified to fight western fires. We sent a ten man crew to Oregon for two weeks at the request of the U.S. Forest Service.

Our popular federal excess property "Pass Through Program" assisting rural fire departments in acquiring vehicles and equipment proved to be very beneficial to many communities needing forest fire suppression vehicles which their budgets would not allow them to buy.

Fiscal year 1991 is going to be more demanding of the Bureau with less personnel to man towers, fire apparatus and provide the necessary assistance to the fire communities and emergencies as required by MGL Chapter 48 section 28.

Our goal is to train as many fire oriented Division personnel as possible to assist us if we have a serious spring fire situation.

FOREST FIRE PREVENTION AND DETECTION

SMOKEY BEAR POSTER CONTEST FY 90

The Bureau of Fire Control in cooperation with the Massachusetts Federation of Garden Clubs sponsor a Smokey Bear Poster Contest throughout the Commonwealth's many school districts. Over eight thousand youngsters from kindergarten through high school compete for fire awards. Included is an award to a girl or boy enrolled in special education classes. Also, we recognize an adult and a senior citizen category. Winners selected in Massachusetts compete for Regional and National honors. The Winners received a $50.00 dollar Savings Bond and citations for their achievements.

THE BIG "E"

Smokey's annual participation at the Eastern States Exposition in W. Springfield plays a major role in spreading his wildfire prevention messages. Over 800,000 people visit our state's exhibit annually .

BARNSTABLE COUNTY FAIR

District 1 fire personnel annually present "Smokey Bear" at the Barnstable County Fair for a period of five days. Over 200,000 people received his prevention messages.

FIRE PREVENTION WEEK

During Fire Prevention Week in October, the Bureau prevention team with Smokey Bear plays a very important role by coordinating fire prevention activities with many cities and towns in the Commonwealth by attending Fire Prevention programs in schools, elderly housing units, parades and distribution of Smokey Bear prevention materials.

PREVENTION

The Bureau of Fire Control personnel received many requests to visit elementary schools throughout the year. With Smokey in attendance our personnel presented many seminars pertaining to fire prevention is and educational atmosphere . This program has proven very beneficial in acclimating our younger generation in the practice of fire prevention at a most critical stage of their inquisitive life.

In fiscal 1990 Smokey performed in 192 schools and participated in 235 civic functions. We were able to reach approximately 7,500 young elementary school children. Our programs were also administered to older citizens and community functions. Smokey still provides a great deal of excitement at parades and community functions and at the Big "E".

In fiscal 1990 we asked our fire personnel who participated in the prevention presentation to give us an estimate on the amount of people present at all functions involving Smokey Bear. Our estimated attendance without including the Big "E" was 177,550.

We participated in parades, fairs, safety seminars, poster contests, dedications of parks and community sites and many other programs where Smokey's prevention message reaches the public.

SMOKEY AND THE PRO'S

The U.S. Forest Service initiated Smokey and the Pro's Fire Prevention Program on the west coast i 1984 with many of the professional baseball, football and basketball teams. This past fiscal year the Bureau was asked to participate in this fine fire prevention program.

Once again Smokey Bear was honored at Fenway Park to participate in "Smokey and the Pro's Fire Prevention Porgam" at the ball park

FIRE PREVENTION

FOREST FIRE VIOLATIONS;

Another important prevention program is the issuing of criminal citations and warnings to individuals in violation of the Massachusetts Forest Fire Rules and Regulations and M.G.L. Chapter 132 pertaining to Forest Cutting Practices. We witnessed 278 fire and logging violations in fiscal 1990. This past fiscal year the Bureau issued 23 stop orders.

The inspection of logging operations takes up a great deal of the District Fire Warden's and Forest Fire Patrolman's workday. The new Forest Cutting Practice Law has increased the responsibility of these key personnel.

In Fiscal 1989, we had 2,498 logging inspections. This past year we inspected 1851 logging sites. District 12, 360 inspections; District 10, 241 inspections; District 11, 188 inspections; and District 7, had 310 inspections.

The inspection system serves a two fold purpose; it establishes uniform fire minimizing standards with loggers; it also familiarizes our fire personnel with fuel conditions and terrain they might not ordinarily be familar with.

FIRE TOWER DETECTION FY 90

The State is divided in to 13 fire districts. Forty-three active Fire Observation Towers are located in strategic elevated areas throughout these districts. Our tower observers offer the rural fire communities an invaluable asset in detecting forest fires immediately after ignition. This past fiscal year our fire towers detected 1,009 forest fires. This reflects a decrease of 647 detected fires from FY 89. Forest Fires reported by communities totaled 3,507 fires. This reflects a decrease of 225 reported fires from FY 89 by rural fire communities.
Overall detection by towers, aircraft and other sources totaled 2,269 fires. FY 90 started very aggressively in the late summer and fall. A very light snowfall this winter did not really materialize into an active spring fire season.

Immediate detection of forest fires and rapid reporting procedures to rural fire communities is a valuable asset in the reduction of costs to suppress the fires and the preservation of life, property, wildlife and forest resources.

Fiscal year 1991 is going to be more demanding of the Bureau with less personnel to man towers, fire apparatus and provide the necessary assistance to the fire communities and emergencies as required by MGL Chapter 48 section 28.

Our goal is to train as many fire oriented Division personnel as possible to assist us if we have a serious spring fire

PREVENTION

The Bureau of Fire Control personnel received many requests to visit elementary schools throughout the year. With Smokey in attendance our personnel presented many seminars pertaining to fire prevention is and educational atmosphere . This program has proven very beneficial in acclimating our younger generation in the practice of fire prevention at a most critical stage of their inquisitive life.

In fiscal 1990 Smokey performed in 192 schools and participated in 235 civic functions. We were able to reach approximately 7,500 young elementary school children. Our programs were also administered to older citizens and community functions. Smokey still provides a great deal of excitement at parades and community functions and at the Big "E".

In fiscal 1990 we asked our fire personnel who participated in the prevention presentation to give us an estimate on the amount of people present at all functions involving Smokey Bear. Our estimated attendance without including the Big "E" was 7,550.

We participated in parades, fairs, safety seminars, poster contests, dedications of parks and community sites and many other programs where Smokey's prevention message reaches the public.

SMOKEY AND THE PRO'S

The U.S. Forest Service initiated Smokey and the Pro's Fire Prevention Program on the west coast i 1984 with many of the professional baseball, football and basketball teams. This past fiscal year the Bureau was asked to participate in this fine fire prevention program.

Once again Smokey Bear was honored at Fenway Park to participate in "Smokey and the Pro's Fire Prevention Porgam" at the ball park

FIRE PREVENTION

FOREST FIRE VIOLATIONS;

Another important prevention program is the issuing of criminal citations and warnings to individuals in violation of the Massachusetts Forest Fire Rules and Regulations and M.G.L. Chapter 132 pertaining to Forest Cutting Practices. We witnessed 278 fire and logging violations in fiscal 1990. This past fiscal year the Bureau issued 23 stop orders.

The inspection of logging operations takes up a great deal of the District Fire Warden's and Forest Fire Patrolman's workday. The new Forest Cutting Practice Law has increased the responsibility of these key personnel.

SUPPRESSION

The Bureau is mandated by law to assist rural fire communities in the suppression of Wildfire. On many occasions during multi-alarm fires, our personnel not only assist in the suppression of wildfire but also man fire stations to assist in dispatching fire information to other towns if the need arises.

Our fire tower detection system relays to the rural towns exact location of fires detected which creates an immediate response situation to the emergency. This immediate response of fire apparatus to the scene minimizes the danger to lives and property.

The following fire statistics reflects the important role the bureau plays in the overall scope of detecting and suppression of wildfire in the Commonwealth. Without the Bureau's professional firefighting assistance to the many cities and towns of the Commonwealth, the loss of valuable forest and timber products would be catastrophic. Other routine functions were also performed in conjunction with suppression activities.

	FY 89	FY 90
Fires detected by towers	1,624	1,009
Fires Reported	7,569	4,593
Acres Burned	9,099	3,507
Miles Patrolled	568,117	407,871
Assists to Cities & Towns	416	316

FEDERAL EXCESS PROPERTY PROGRAM

The federal Government authorized the Department of Agriculture - United States Forest Service to enter into an agreement with the Commonwealth of Massachusetts and its designee, the Department of Environmental Management, Bureau of Fire Control, to administer the Excess Property "Pass Through" Program. This program has generated a tremendous amount of interest from the rural fire communities in the Commonwealth.

Since the inception of the program in November of 1980, 218 Communities have entered into agreements with the Bureau of Fire Control to accept federal excess property under the terms set forth by the U.S. Forest Service, the General Services Administration, and the Massachusetts Bureau of Fire Control. This reflects an increase of 8 communities from fiscal 1989.

In fiscal 1990 excess property from federal government was in heavy demand by the rural fire communities in every county. Due to revised priority procedures by the federal government, many types of military vehicles are hard to acquire. We have to compte with Rhode Island, New Hampshire, Vermont, and Maine. Our vehicle acquisition has dropped considerably from the previous year.

By acquisition through the "Pass Through" Program, many communities were able to fulfill the fire protection needs that the town people demanded at no cost to the particular town.

Over 39 fire communities received many items of excess property this past fiscal year. Desks, chairs, filing cabinets, book cases, stroage cabinets, tables-shelving, typewriters, vaccuum cleaners, fire protective clothing, shop equipment, and small tools were items in demand by many small communities. The approximate dollar value of all excess property transfered to RFd's in fiscal 1990 totaled 247,000 dollars. Since the inception of the "Pass Through" Program in 1980, a dollar value of 2,559,556 in excess federal property was transferred to the rural fire communities of the Commonwealth.

This past fiscal year the Bureau screened and acquired 564,833.00 dollars worth of federal excess property that was transferred to rural fire communities and to the five regions under the Division of Forests and Parks.

The in-house machinery to administer the program includes five Regional Excess Property Coordinator who have the responsibility of maintaining the flow of records from the Field to Boston.

The District Fire Wardens have direct contact with their Fire Chiefs as he in turn will start the process from the town to the Regional Coordinator.

The Bureau of Fire Control has administered the Excess Property Program since the 1960's when the U.S. Forest Service enabled the states to use their high federal priority to acquire property that would improve their fire protection capabilities.

The present dollar value of our Excess Property Inventory is $4,002,103.00 an increase of $564,833.00 from fiscal '89.

Federal Excess Property Loaned to Regions with $500.00 Value or more

REGION I

Property	Value
1980 Front End Loader	$21,335.0
1980 GMC Truck Chassis	$29,250.0
1979 Dodge Pick-up 4X4	$ 7,995.00
1979 Dodge Pickup 4X4	$ 7,995.00
1979 Dodge Pickup	$ 7,995.00
(4) 1/4 Ton Jeep Trucks @$2642	$10,568.00
(2) adler Typewriters @580.00	$ 1,150.00
1985 Plymouth Reliant	$ 4,728.00
Lawn Mower	$ 1,412.00
	$91,438.00

REGION II

Property	Value
IBM Typewriter	$ 729.00
(6) Adler Typewriters @ $580.00	$ 3,480.00
(2) 1/4 Ton Jeep Trailer @ $2,496	$ 4,992.00
(2) VCR's @ $1,237	$ 2,474.00
	$11,675.00

REGION III

Property	Value
1979 Ford Fairmont	$ 5,000.00
(4) Gamma Goats All Purpose Vehicles	$56,346.00
1/4 Ton Jeep Trailer	$ 2,642.00
(5) Adler Typewriters @ $580.00	$ 2,940.00
1979 Dodge Pickup 4X4	$ 7,304.00
1979 dodge Pickup 4X4	$ 8,562.00
1979 Dodge Pickup 4X4	$ 7,995.00
Generator	$ 1,115.00

REGION IV

Propety	Value
(2) Lawn Mowers @ $1526.00	$ 4,578.00
Jack-Dolly	$ 550.00
(2) IBM Typewriters @ $743.00	$ 1,487.00
1980 Tank Truck	$85,762.00
International Loadstar Trk.	$19,457.00
House Trailer on wheels	$ 2,200.00
(6) Adler Typewriters @ $580.00	$ 3,480.00
Copier Machine	$10,000.00
(2) 1/4 Ton Jeep Trailer @$2652.	$ 5,304.00
	$132,818.00

REGION V

Property	Value
Ford Tractor	$ 6,387.00
(1) Hydraulic Jack	$ 550.00
Chevy Citation	$ 5,925.00
	$12,862.00

Rural Fire Communities Who received Excess Propt. Vehicles and Generator

Area	County	Property	Cost
Templeton	N. Worcester	4x4 pickup truck	$ 7,305.00
Kingston	Plymouth	Truck Tractor	$12,500.00
Sutton	N. Worcester	4X4 Pickup Truck	$ 7,995.00
Southboro	N. Worcester	4X4 Pickup Truck	$ 7,305.00
Berkley	Bristol	Trailer Tank	$ 3,510.00
Templeton	N. Worcester	Breathing Apparatus	$ 1,375.00
Andover	Essex	Typewriter Elec Adler	$ 580.00
Essex	Essex	Typewriter Elec Adler	$ 580.00
Berlin	N. Worcester	Typewriter Elec Adler	$ 580.00
Granville	Hampden	Typewriter Elec Adler	$ 580.00
Montgomery	Hampden	Typewriter Elec Adler	$ 580.00
Blandford	Hampden	Typewriter Elec Adler	$ 580.00
Wales	Hampden	Typewriter Elec Adler	$ 580.00
Blackstone	S. Worcester	2 Generators	$13,000.00
Lee	Berkshire	Fire Pumper	$10,392.00
Hardwich	N. Worcester	Generator	$ 7,147.00
Hunsdale	Berkshire	Tank Truck	$28,954.00
Hubbardson	N. Worcester	1/4 Ton Jeep Trailer	$ 2,652.00
Foxboro	Norfolk	(2) 1/4 Ton Jeep Trailer	$ 5,304.00
Uxbridge	S. Worcester	(2) 1/4 Ton Jeep Trailer	$ 5,284.00
Princeton	N. Worcester	1/4 Ton Jeep Trailer	$ 2,642.00
Hamilton	Essex	1/4 Ton Jeep Trailer	$ 2,642.00
Petersham	N. Worcester	1/4 Ton Jeep Trailer	$ 2,642.00
Townsend	N. Worcester	1/4 Ton Jeep Trailer	$ 2,642.00
Barnstable	Fire Academy	1/4 Ton Jeep Trailer	$ 2,642.00
Salisbury	Essex	1/4 Ton Jeep Trailer	$ 2,642.00
Middleton	Essex	1/4 Ton Jeep Trailer	$ 2,642.00
Rockport	Essex	1/4 Ton Jeep Trailer	$ 2,642.00
Manchester	Essex	1/4 Ton Jeep Trailer	$ 2,642.00

N. Andover	Essex	1/4 Ton Jeep Trailer	$ 2,642.00
Wenham	Essex	1/4 Ton Jeep Trailer	$ 2,642.00
Concord	S. Middlesex	1/4 Ton Jeep Trailer	$ 2,642.00
Charlemont	Franklin	1/4 Ton Jeep Trailer	$ 2,642.00
Eastham	Barnstable	1/4 Ton Jeep Trailer	$ 2,642.00
W. Newbury	Essex	1/4 Ton Jeep Trailer	$ 2,642.00
Ipswich	Essex	1/4 Ton Jeep Trailer	$ 2,642.00
S. Deerfield	Franklin	Tank Truck	$85,762.00
Petersham	N. Worcester	4X4 Pickup	$ 7,995.00

PROGRAM III

FEDERAL EXCESS PROPERTY "PASS THROUGH PROGRAM" STATISTICS

PUBLIC LAW 95-313

	1982	1983	1984	1985	1986	1987	1988	1989	1990
RURAL FIRE DEPARTMENTS ENROLLED IN "PASS THROUGH PROGRAM".	90	127	148	161	183	191	204	210	218

	1982	1983	1984	1985	1986	1987	1988	1989	1990
VALUE OF EXCESS PROPERTY ACQUIRED FOR FIRE DEPARTMENTS AND DEPARTMENTAL USE	$329,264	$456,822	$572,854	$477,184	$555,680	$896,614	$560,157	$510,210	564,833

TOTAL VALUE OF PROPERTY ON INVENTORY WITH THE COMMONWEALTH $4,002,103.00 Dollars

PRESUPPRESSION - CONSTRUCTION - MAINTENANCE

Each year our construction crew headquarters in Brimfield performs many tasks in reconstructing fire towers, cabins, telephone and powerlines. This year was no exception.

Fiscal Year 1990 was a busy year for the Fire Construction Crew stationed at Brimfield. Under the Direction of myself, Construction Foreman John Motroni, the crew was able to assist virtually every agency within the department. Assisting me were my experienced technical crew of, Gary Faulkins, Richard Riberdy and William Cloran.

Again in 1990 their statewide duties took us to every region and fire district within the department. The Fire Construction Crew assisted the Bureau of Recreation, Fire Control, Rinks and Pools, and for the Administration, the statewide radio network.

Below please find a brief summary of some of the various duties performed throughout the state.

REGION I

RECREATION

1) Install new poerlines to the headquarters at Nickerson S.F.
2) Powerline repairs in Nickerson State Forest Campground.
3) Wire removal in Brewster at State purchased buildings and line construction.
4) Troubleshooting electrical problems at Nickerson bathhouse.

FIRE CONTROL

1) Powerline repairs at Barnstable Tower, Fire District 1.
2) Electrical and tower repairs, Middleboro Tower, Fire District #2.
3) Install new pole, crossarms, and telephone repairs at Barnstable.
4) Instal new roof on Middleboro Tower, Fire District 2.
5) Rebuild inside of Cabin at Fall River Tower, Fire District 3.
6) Tower Inspections in all fire districts.

STATEWIDE RADIO SYSTEM

1) New antenna cables at Plymouth for Microwave Channel 1.
2) Remove old antenna and cables from Bourne Railroad Bridge.
3) Install channel 2 repeater at Pine Hill, Plymouth.

MISCELLANEOUS

1) Antenna and Cable installation - West Yarmouth Fire Department for mutual aid and civil defense.
2) Install antennas and cable for Environmental Law Enforcement and Registry at Plymouth.

REGION II

RECREATION

1) Radio installation at Halibut Point State Park.
2) Wiring projects at Bradley Palmer to upgrade buildings.
3) Electrical system upgrade at Carlisle Headquarters.
4) Antenna cable installation at Cochituate State Park.
5) Powerline repairs at Harold Parker Campground.

FIRE CONTROL

1) Tower inspections in all fire districts.
2) Powerline repairs to Manchester Tower, Fire District 5.
3) Cabin and platform repairs at Chelmsford and Groton Towers, Fire District 6.
4) Antenna installation Carlisle, Fire Headquarters.
5) Weather instruments repair and installation at Carlisle.
6) Install new telephone lines at Groton Towers, Fire District 6.

MISCELLANEOUS

1) Antenna repairs at Westboro Field Office, Rinks & Pools.

REGION III

RECREATION

1) Repair powerlines at Mt. Wachusett.
2) Powerline repairs at Douglas State Forest.
3) Install new outside electrical system at Purgatory Chasm pavillion.

FIRE CONTROL

1) New roof on Phillipston Tower cabin, Fire District 8.
2) Steel replacement at Phillipston Tower, Fire District 8.
3) Guy wire repairs at West Brookfield Tower, Fire District 7.
4) Painting steel at Princeton Tower, Fire Distrit 8.
5) Install new roof on Charlton Tower, Fire District 7.
6) Rebuild cabin interior, Charlton Tower, Fire District 7.
7) Tower inspections of all towers in Fire District 7 & 8.
8) Removal of radio tower from Douglas Fire h. Q.
9) New roof installed at West Brookfield Tower, Fire District 7.
10) Install new ceiling at West Brookfield Tower, Fire District 7.
11) Repair powerlines to Oxford Tower, Fire District 7.

STATEWIDE RADIO SYSTEM

1) Antenna installation at Princeton for radio network.

REGION IV

RECREATION

1) Powerline repairs to Woodman Pond.
2) Well repairs at Woodman Pond.
3) Telephone line repair at Chester State Forest.
4) Electrical repairs at rec. areas, Laural Lake, Erving.
5) New powerline to concession building at Mohawk S.F..
6) Powerline repairs to D.A.R. campground, Goshen.
7) Powerline repairs at Robinson State Park.
8) Install underground telephone system at Chicopee State Park For alarms and communications.
9) Welding tractors throughout region 4.
10) Building maintenance at Brimfield Garage area.
11) Power and telephone repairs at Chester State Forest.
12) Well pumping and testing at Wendell State Forest.

FIRE CONTROL

1) New roof on Chester Tower, Fire District 11.
2) New roof on Shelburn Tower, Fire District 9.
3) Telephone line repairs to Goshen Tower, Fire District 11.
4) Powerline repairs to Ludlow Tower, Fire District 11.
5) Tower painting at Pelham Tower, Fire District 10.
6) Steel replacement at Pelham Tower, Fire District 10.
7) New Antenna at Mohawk State Forest, Fire District 9.
8) Security lights at Erving State Forest, Fire District 9.

STATEWIDE RADIO SYSTEM

1) Install channel 1 microwave system at Pelham, including new antenna and cables.
2) Install channel 2 repeater antenna, brackets, and cables at Pelham Tower.
3) Remove multple llegal antenna installations from Pelham Tower.

MISCELLANEOUS

1) Electrical and telephone repairs at Springfield Rink.
2) Ladder fabrication for Rinks and Pools, Region 4.
3) Welding bleachers at Holyoke and Springfield Rinks.
4) Fence repairs around Agawam Pool, Region 4
5) Remove old microwave dishes and cables as a public service for educational T.V., channel 2 from Pelham Tower

REGION V

RECREATION

1.) Install guy wires to powerline at Tolland State Forest.

2.) Repair signal wire for pumps at Tolland Campground.

3.) Install antenna cables for radio at Pittsfield State Forest, for recreatin and fire control use.

4.) Remove fence, stairs, and steel from Mt. Washington Tower Fire District 12.

5.) Repair weather instruments at Pittsfield State Forest.

STATEWIDE RADIO SYSTEM

1.) Install Channel 2 repeater cables at Greylock for Statewide radio network.

STATEWIDE RADIO NETWORK

Many manhours were spent by the crew working on our statewide radio system. Under the administrative direction of Deputy Commissioner Thomas Lynch, the crew installed seven permanent channel #2 repeaters. These repeaters are located at Princeton, Andover, Pelham, Mt. Greylock, Monterey, Sharon, and Plymouth. These Units are all controlled by tone and monitored at our control stations at Princeton.

To place redundancy in our system, we piggyback on the statewide microwave system built by the Department of Public Works and the Lottery Commission. Our channel #1 microwave locations are Windsor, Pelham, Princeton, Andover, Boston, Plymouth, and Fall River. Some of these locations will change and expand as the Lottery microwave system expands.

The backbone, or mainframe of our system is all new equipment purchased by Mr. Lynch along with a $40,000 control center. Minor adjustments will be made to continually improve upon the systems.

In closing may I add that we expect fiscal 1991 to be more demanding upon the Fire Construction Crew. With resources being limited we will be expected to assist even more of the other agencies within our department. This year over 65% of our manhours were used outside the Bureau of Fire Control. I expect fiscal 1991 to stretch even thinner our limited resources.

PRESUPPRESSION

ASSISTANCE TO OTHER BUREAUS;

The Bureau of Fire Control fire personnel assisted other Department Bureaus in many phases of park related activities. According to Bureau statistics, 17,527 manhours were performed assisting other Bureaus in the Division of Forests and Parks. On a monthly average 1,692 manhours is spent on work projects other than Bureau's work assignment. Cooperation within the Division by the Bureau of Fire Control has to add to the Bureau's wide expertise in all kinds of work projects it is asked to perform.

ROAD AND FIRE LANE MAINTENANCE

Each year our fire personnel are required to maintain roads and fire lanes in all state owned lands. Fire Ponds are also maintained as a source of water supply during suppression activities. This past year we maintained 259 miles of fire access roads.

MASSACHUSETTS FOREST FIRE COUNCIL

The Massachusetts Forest Fire Council has proven to be a very important organization to the Bureau of Fire Control. The Council has representation from every forest fire association in the Commonwealth., The Council meets quarterly to discuss important forest fire techniques and procedures.

A progress report is presented to the Council by the Chief Fire Warden during these sessions. By statute the Bureau has the responsibility to assist all fire communities in all related detection, prevention, presuppression and suppression activities.

The following organizations have delegates who attend these quaterly meetings:

Barnstable County Fire Chiefs Association
Cape Cod foresters and Firefighters Association
Plymouth County Forest Wardens and Firefighters Association
Bristol County Forest Wardens and Firefighters Assocation
Norfolk County Firefighters and Wardens Association
Essex County Fire Wardens Association
Blackstone Valley Forestry Assocation
Quabog Mutual Aid Association
Worcester West Forest Wardens Association
Western Mass. Forest Wardens Association
Berkshire County Forest Wardens Assocation

Members also include the Director of Forests and Parks, Regional Forests and Parks Supervisors, District Fire Wardens and Patrolmen, Rural Fire Department Fire Chiefs, Forest Wardens and the Director of Air Quality Control DEQE.

NORTHEASTERN FOREST FIRE PROTECTION COMMISSIN (COMPACT)

The Northeastern Interstate Forest Fire Protection Compact Public Law #129-81st Congress was passed to promote effective prevention and control of forest fires in the northeast region of the United States and adjacent areas in Canada by maintenance of adequate forest fire fighting services by member states and by providing for mutual aid in fighting forest fires. This law was approved by Congress in 1949. Massachusetts also passed a law to join the Compact. Chapter 132 Annotated Codes Appendix 1-6. It was designated as "The Northeastern Forest Fire Protection Commission" (COMPACT).

The COMPACT is comprised of three Commissioners from each state and the provinces of Quebec and New Brunswick who appoint an Executive Director who will perform all the duties customarily performed by a secretary and a treasurer. There are four standing committees designated: Operations Committee (Fire Supervisors), Training Committee, Equipment Committee, and Prevention Committee. Each standing committee shall have one representative from each compact member state.

Committees shall meet no less then once per year and shall present a report of its activities to the annual meeting of the Commissioners held every July.

The COMPACT is comprised of fire personnel from Massachusetts, Connecticut, Rhode Island, New York, Vermont, New Hampshire, Maine and the Provinces of Quebec and New Brunswick from neighboring Canada.

Each Year COMPACT holds a training seminar to instruct COMPACT crews in the latest advances in forest fire control and how to react to inter and intra state emergencies.

COMPACT WINTER TRAINING

This year COMPACT winter training seminar was held in Rutland, Vt. on February 5th through the 8th 1990. This years training theme stressed "INCIDENT COMMAND SYSTEM"

OPERATIONS COMMITTEE

Massachusetts is represented on this committee by Acting Chief Fire Warden Patsy Bisceglia. This Committee is made up of Fire Supervisors from every State in the Compact which also includes the provinces of Quebec and New Brunswick in Canada. This Committee is responsible in formulating a five year training program, standardizing equipment and setting up forest fire prevention programs. Recommendations are made to the Compact Commissioners for their approval.

TRAINING COMMITTEE

Massachusetts is represented on this Committee by District Fire Warden Joe Sakaske. This committee is responsible for formulating all training procedures which will be adopted by the Compact States. Recommendations are made to the Operations Committee for their approval.

EQUIPMENT COMMITTEE

Massachusetts is represented on this Committee by District Fire Warden Philip Moulton. The equipment Committee is responsible in setting standards on all fire fighting equipment which will be used by the Compact States. Recommendations are then made to the Operations Committee for their approval or disapproval.

PREVENTION COMMITTEE

Massachusetts is represented on this committee by William Care, District #9 Fire Warden. This committee is responsible in formulating forest fire prevention programs for the COMPACT and makes its recommendations to the Operations Committee.

COMPACT TRAINING COMMITTEE

TRAINING COMMITTEE MEETING

The Training Committee met eight times throughout the past year. Team members met last August at the Annual Meeting in Pittsfield, Masssachusetts and again in Fredericton, New Brunswick at the 1989 Summer Workshop. We also met four more times in October, November (2) and January at the Concord Forestry Warehouse in New Hampshire. Once more time during the 1990 Winter Session and finally at the April meeting in cooperation with the Prevention Committee in Alfred, Maine where we aided and assisted said Committee with plans for the 1991 Winter Session.

Our charge by the Operation's Committee to date and since last year's annual meeting is as such:

1990 Winter Charge: ICS

1990 Summer Charge: No Session

1991 Winter Charge: Fire Prevention Preparedness - in cooperatin with the Prevention Committee.

1991 Summer Charge: Mobilization - call up session - in cooperation with the Equipment Committee.

1992 Winter Charge: Planning an emergency exercise - incident stress management - Operations Committee will check out.

SUMMER CHARGE 1989

August 22-24, 1989. Fredericton, New Brunswick. An excellent session on Fire Cause, Investigation and Determination. Hosted by New Brunswick's Wayne Clowater, and Coordinated by Training Team member Paul Gilmore.

WINTER CHARGE 1990

February 1990, Rutland, Vermont. Incident Command System. Overview of I 220 "canned" course. The rest of session was all 220 related but adapted to fulfill Compact needs

TRAINING PROGRAMS ATTENDED BY COMPACT MEMBERS

September 11-14, 1989. Middle Atlantic interstate Forest Fire Protection Compact held in Emmitsburg, Maryland. Arson and related subject was the theme of their compact session.

January 23, 1990. 1990 Wildland Fire Training Conference in Denver, Colorado. Fire Training and Communication in the field of training was its subject matter. Topics of Discussion include: "I" and "S" courses.

June 26-28, 1990. ICS training. An invitation was extended to Compact State Fire Supervisors/Training Officers to attend New Hampshire's session at the New Hampshire Technical Institute in Concord. The USFS provided the instructors.

TRAINING OF BUREAU AND DIVISIONAL PERSONNEL:

A "Record of Training" is being maintained by all District Fire Wardens for each individual trained to fight forest fires.

Training is an on-going, never ceasing requirement in all types of fire fighting. Due to personnel turn-over inthe Bureau, training is a prerequisite to effective fire detection, prevention and suppression techniques. The safety of employees and the general public is of high priority.

METROPOLITAN DISTRICT COMMISSION EMPLOYEE TRAINING:

Many fires occur on MDC property during the course of the year. The Bureau has always responded to the fire emergencies on their property.

For the past two years our training committee programed MDC personnel into training sessions, both hands-on training and classroom training.

Hydraulic training and moving water in all types of terrain is very important when called upon to fight wild fires.

The following topics were discussed and demonstrated at the all day session:

1. Hydraulics - water moving from one point to another.
2. Hose, fittings,, and nozzles.
3. Types of pumps, centrifugal, rotary and piston actions.
4. Operation of pumps - Mark #3, BB 4's and Floatation.
5. Hose laying and tandem pump.

Fifty-nine Bureau personnel received intensive training in the knowledge of hydraulics, pump operations, tandem pumping, types of nozzles, hose fittings and proper laying of hose long distances.

Our Bureau personnel performed 182 in-house training sessions and 105 training sessions with other state agency personnel and Rural Fire Community personnel.

EMERGENCY AND DISASTER TRAINING:

One day per month training seminars are held at the Civil Defense Hdqtrs. in Framingham for the purpose of coordinating resources, training and operations in the event of a major disaster caused by human or natural situations.

The Assistant Chief Fire Warden attends these monthly training sessions as the liaison for the Department, which is required under Executive Order #144 signed in 1978 by the Governor.

Training sessions include Departmental responsibility to the Civil Defense Agency in the event of hurricanes, nuclear accidents, earthquakes, blizzards or any other disaster which may threaten lives and property. Scenario's of disaster situations are simulated and response by agency liaisons are recorded during these sessions

RED CARD AND GREEN CARD TRAINING;

Red Card qualifies personnel to fight out-of-state fires on federal lands. Green Card qualifies personnel to fight fires with the COMPACT states. Standards for each are very similar. To qualify, fire fighters have to take the S-130 Basic Firefighting Course and S-190 Introduction to Fire Behavior Course.

A physical stress test is also required to be certified. Thirty-four candidates enrolled and only fourteen were Red Carded. Each year a physical stress test is required to successfully maintain the Red Card.

CONTROL BURN AT OTIS AFB

The Bureau took part in a control burn at the Otis Air Base impact area. Fire personnel form Districts 1, 2 and 3, two patrol trucks, and three brushbreakers from District 1 and District 2 assisted the Otis AFB FD, the Sandwich FD, Bourne FD, and the Onset FD in securing the perimeter of the fire.

During the course of the day 750 acres were successfully burned without any incidents. Winds and temperatures played an important part in maintaining a smooth constant burn.

Without a control burn in the early spring usually a fire will ignite in the area due to heavy artillery shelling and rocket shelling. If a fire ignites in this area in April or early May, weather conditions are conducive to a raging wild fire threatening hundreds of acres of forest, human life and personal property.

RURAL COMMUNITY FIRE PROTECTION

The Massachusetts Fire Academy provides fire training for the 198 communities in the Commonwealth with populations under 10,000.

In FY 1990 the Fire Academy conducted 590 programs for 130 Communities WITH 3560 Students successfully completing the course of instruction.

In addition, the Fire Academy has worked with the Bureau to develop a slidetape training program dealing with wildfire suppression and hazardous waste which will be used in-house and with municipal fire departments and divisional personnel.

TRAINING

The following meetings and training sessions were attended during FY 90 . They were both informational and beneficial to the Bureau.

Wildfire; States of Arizona and Utah, July 10 thru July 21, total of 8,115 acres, lead a crew from Connecticut, with two Massachusetts firefighters, excellent leadership training.

Wildfire; State of Idaho, August 6 thru August 16, total of 2,600 acres, lead a crew comprised of one squad each from Massachusetts, New Hampshire and Maine, excellent cross training with other agencies.

Forest Fire Investigation and Cause Analysis, August, an informative program on reading burn patterns, and determining points of origin, also information need in preparing a case. Held in Fredericton N. B. sponsored by the Northeast Compact.

Crew Representative Training, February 27, thru March 1, Lewiston, PA. learn responsibilities of a CREP when working with WEstern Fire crews form other agencies.

Multi-Agency Coordination (Group Coordinator) Apr. 17 thru April 27, Marana, Az. learn the function of a Group Coordinator when working All-Risk Incidents, with various political, governmental and local jurisdictions.

Fire Foam Seminar, June 4 thru June 7, Calais, Me. and St. Stephen, N. B.. A very indepth look at Class A foam, proportioners, and appliances used in generating foam. Look at its uses both in structural and wildland application, environmental concerns and safety aspects. Hands-on exercise.

Northeast Compact Equipment committee and the Northeast Forest Fire Supervisors meeting and equipment workshop. June 18 thru June 21, Portland, ME. Discuss the 1991 equipment call-up for the Compact, and view the latest in equipment in wildland fire suppression, vehicles, aircraft and ground equipment used in fire suppression.

ICS Transition, June 26 thru June 28, Concord, N.H. sponsored by the Division of Forests and Lands. A look at the Transition from the LFO to the ICS Management system and how it fits into Incidents of all risk.

ICS Transition, On June 26-28 1990, the U.S.F.S. in cooperation with the State of New Hampshire, hosted a transition training conference for the I.C.S. The intended goal was to familiarize and instruct the participants of the values, implemention and operations of the I.C.S. in a multi-agency/Multi-jurisdictional incident.

N.F.D.R.S. Workshop, On February 12-15, 1990, the U.S.F.S in cooperation with the Wisconsin D.N.R., hosted a training workshop on the revised 1988 NFDRS and weather Observations. The programs format is to inform participants of the revisions to the 1978 NFDRS as was required under the original contract design.

Forest Fire Prevention for the "90"

The first of its kind conference was held in Kentucky in February 1990. it was held for the purpose of opening lines of communication between and among those entities, and to promote the free and open exchange of ideas pertaining to forest fire prevention.

STATE SAFETY COMMITTEE

In 1983 the Chief Fire Warden was designated chairman of the State Safety Committee by the Director of Forests & Parks. The committee is comprised of Bureau Chiefs in the Division of Forests & Parks.

A District Fire Warden was designated as chairman in each of the 5 regions in the Division. The Safety Committee objective was to formulate safety policy and safety programs for all division personnel and millions of the public patrons who visit our network state parks. It is the responsibility of the Regional Safety Chairman to inspect all worksites areas, buildings, vehicles, and all types of power equipment to see if they meet all the safety standards prescribed by OSHA.

Weekly reports are received by the Regional Chairman from Area supervisors who monitor safety standards in their respective areas. If a safety hazard or a safety problem is reported, it is the responsibility of the Region Chairman and his Regional Safety Chairman in Boston to take what ever corrective actions are necessary. The Director of Forests and Parks will make the final decision.

STATISTICS-ACTIVITIES

FIRE CONTROL ACTIVITY STATISTICS

Activity	1986	1987	1988	1989	1990
Miles Patrolled	498,325	436,029	542,479	568,117	407,871
Logging Inspec.	3,381	2,622	3,032	2,498	1,851
Fires Detected	4,401	2,049	3,919	3,623	2,269
(Towers)	3,160	863	1,798	1,642	1,009
(Aerial)	6	23	67	60	17
(Other)	1,235	1,163	2,054	1,921	1,324
Prevention Prgms.	632	736	590	578	427
Acres Burned	9,110	3,418	8,164	9,099	3,507
Fires Reported	6,612	2,912	5,721	3,732	4,593
Truck Runs	416	271	804	544	250
Forest Fire Violations	412	83	364	135	148
Ch. 132 Violations	183	102	130	84	130
Ch. 132 Cut Plans	816	591	644	577	620
Asst. Cities/Town	1,680	387	581	416	316
Roads (Service)	336	205	256	174	260
Training Programs	771	527	362	340	287
(In-House)	495	424	256	200	182
(Other)	276	103	106	140	105
Assistance to other Bureau (Manhours)			16,294	20,298	17,527 hrs.

DISTRICTS	1	2	3	4	5	6	7	8	9	10	11	12	14	TOTALS
MILES PATROLLED	29,789	16,334	25,925	17,189	34,516	29,028	36,456	43,998	43,523	41,376	46,348	17,784	25,605	407,871
PREVENTION PROGRAMS	28	22	25	35	40	41	33	58	21	41	77	5	12	427
SCHOOL PROGRAMS	5	3	15	10	18	18	6	43	7	22	39	2	4	192
CIVIC PROGRAMS	23	19	10	25	22	23	16	15	14	19	38	3	8	235
FIRES DETECTED	301	210	129	454	120	27	276	369	105	31	76	20	151	2,269
TOWERS	125	158	121	298	38	20	152	17	9	15	23	13	20	1,009
AIRCRAFT	0	5	0	1	0	0	1	4	0	5	1	0	0	17
OTHER	176	49	0	204	120	7	123	348	96	11	52	7	131	1,324
FIRES REPORTED BY CITIES/TOWNS	194	530	375	936	123	570	433	379	178	262	319	91	203	4593
ASSISTS TO CITIES/TOWNS	10	14	1	20	3	8	17	32	10	0	194	0	7	316
FIRES ON DIVISION LANDS	2	22	2	5	4	2	6	3	0	1	9	0	1	57
CH. 132 LOGGING INSPECTIONS	0	34	31	24	76	176	310	147	187	241	188	360	77	1,851
VIOLATIONS- FIRE	0	1	0	66	1	2	44	4	9	11	3	7	0	148
OTHER	0	0	0	60	0	3	7	4	18	26	8	4	0	130
STOP ORDERS	0	0	0	0	1	0	7	3	7	5	0	0	0	23
CUTTING PLANS PROCESSED	0	13	23	2	10	41	59	141	109	78	67	68	9	620
MILES OF ACCESS RDS. SERVICED	1	13.25	10	13.5	31	8	7	3.25	8.5	5	13	141	4.75	259.25
TRAINING- IN-HOUSE	2	16	15	12	4	0	2	5	49	26	24	22	5	182
OTHER	0	7	1	2	2	16	0	6	24	2	34	5	6	105
(man-hours) ASSISTS TO OTHER BUREAUS	1,575	334	1,290	1,206	539	2,446	606	1,296	2,392	1,133	1947.5	2106	656	17,527
ACRES BURNED	216	294	334	436	169	551	373	230	149	231	244	125	155	3,507
RAILROAD FIRES	0	0	0	2	1	0	0	9	8	0	5	4	0	29

5 YEAR TOTALS - FY 1986 THRU FY 1990

Districts	Prevention Programs School/Other	Training In-house/Other		Chapter 132 Inspections	Violations Fire/Other		Miles Presuppression Access Rds Svc.
1	158	24	6	5	8	0	22
2	290	164	106	545	51	65	88
3	160	84	9	320	3	32	178
4	236	114	9	276	201	65	60
5	179	58	6	213	16	3	172
6	170	85	42	764	27	33	20
7	256	51	15	2071	90	56	12
8	257	26	23	888	24	42	143
9	78	228	104	2719	50	108	59
10	197	343	54	2334	111	177	48
11	365	172	116	820	34	43	35
12	87	126	40	2273	216	8	218
14	319	76	56	486	11	1	37
TOTALS	2,752	1,551	586	13,714	842	633	1,092 Miles

FISCAL 1990

STRICT	PREVENTIVE PRGMS.		TRAINING		CHAPTER #132	VIOLATIONS		PRESUPPRESS
	SCHOOL/OTHER		IN HOUSE / OTHER		INSPECTIONS	FIRE /	OTHER	ACCESS RDS S
1	5	23	2	0	0	0	0	1
2	3	19	16	7	34	1	0	13.
3	15	10	15	1	31	0	0	10
4	10	25	12	2	24	66	60	13.5
5	18	22	4	2	76	1	0	31
6	18	23	0	16	176	2	3	8
7	6	16	2	0	310	44	7	7
8	43	15	5	6	147	4	4	3.2
9	7	14	49	24	187	9	18	8.5
10	22	19	26	2	241	11	26	5
11	39	38	24	34	188	3	8	13
12	2	3	22	5	360	7	4	141.0
14	4	8	5	6	77	0	0	4.75
otal	192	235	182	105	1,851	148	130	259.25

FISCAL 1989

rict	Prevention Prgms School	Other	Training In-House	Other	Chapt #132 Inspections	Violations Fire	Other	Presuppres Access Rds S
1	9	25	4	1	0	0	0	3
2	17	17	16	10	60	6	9	18
3	13	8	8	5	21	0	2	41.5
4	8	34	8	4	60	58	5	12.0
5	16	24	7	0	66	1	0	34
6	14	26	19	17	164	2	1	6
7	17	32	0	12	263	5	11	1.55
8	28	14	7	7	181	10	0	10 ½
9	9	10	41	21	456	18	19	5
10	19	8	23	23	294	13	24	0
11	57	96	38	19	334	1	9	7
12	12	12	18	4	526	14	4	36.25
14	35	18	11	17	73	7	0	.25

FISCAL 1988

	Prevention Prgms		Training		Chapt #132	Violations		Presuppress
strict	School /	Other	In-House /	Other	Inspections	Fire /	Other	Access Rds S
1	15	5	0	1	5	8	0	0
2	54	5	22	9	69	16	41	22 ½
3	12	9	21	1	28	1	1	16
4	50		11	2	67	64	0	3.75
5	3	9	8	4	8	2	2	25
6	38	1	30	9	171	13	0	0
7	14	54	5	8	497	22	12	1.0
8	47	0	2	4	186	7	26	104 ½
9	4	6	16	39	922	20	52	20
10	6	4	48	2	448	2	0	10
11	3	9	33	14	56	9	0	8.35
12	7	2	25	1	471	193	0	10
14	46	5	29	14	81	0	0	7

FISCAL 1987

trict	Prevention Prgms. School / Other	Training In-House	Training Other	Chapt #132 Inspections	Violations Fire	Violations Other	Presuppress Access Rds S
- 1	42	6	3	0	0	0	5
- 2	85	42	46	118	13	0	25 ½
- 3	39	19	2	78	2	3	65.30
- 4	65	47	2	53	12	0	8.0
- 5	39	19	0	15	4	1	33
- 6	23	10	8	110	8	8	0
- 7	60	19	1	461	19	12	1.35
- 8	58	8	4	176	1	6	9
- 9	19	73	0	296	3	17	19.9
-10	75	126	0	708	38	42	15.65
- 11	60	33	16	98	16	13	3
12	15	8	11	383	2	0	9
14	183	14	10	126	1	0	10 ½

FISCAL 1986

strict	Prevention Prgms School /	Other	Training In-House /	Other	Chapt #132 Inspections	Violations Fire /	Other	Presuppre Access Rds
1	34		12	1	0	0	0	13
2	89		68	34	264	15	15	9
3	54		21	0	162	0	26	45
4	44		48	1	72	1	0	23.5
5	48		12	0	48	8	0	49
6	27		22	6	143	2	21	6
7	46		25	24	540	0	14	1.10
8	52		4	2	198	2	6	17
9	9		49	20	258	0	2	5
10	44		120	27	643	47	85	17.75
11	63		44	33	144	5	13	4.25
12	34		53	19	533	0	0	21.45
14	20		17	9	129	3	1	15.0

No. of Fires (Type of Area)

July 1989 - June 1990

District	Comm. Forest	Non-Comm. Forest	Nonforested Watershed	Non-forest	Total
1	0	194	0	0	194
2	4	525	1	0	530
3	1	281	0	93	375
4	173	594	18	151	936
5	6	40	2	75	123
6	2	382	1	185	570
7	13	146	8	266	433
8	19	179	17	164	379
9	0	178	0	0	178
10	24	185	2	51	262
11	15	272	0	32	319
12	23	55	1	12	91
14	0	130	21	52	203
Total	280	3161	71	1081	4593

Acres Burned (Type of Area)

July 1989 - June 1990

District	Comm. Forest	Non-Comm. Forest	Nonforested Watershed	Non-forest	Total
1	0.00	216.00	0.00	0.00	216.00
2	1.50	292.50	0.25	0.00	294.25
3	1.00	285.50	0.00	47.25	333.75
4	246.25	149.00	4.50	37.75	437.50
5	73.00	23.75	20.25	51.50	168.50
6	6.00	469.25	0.25	75.25	550.75
7	44.00	143.00	14.00	172.25	373.25
8	44.75	100.75	11.00	73.50	230.00
9	0.00	148.75	0.00	0.00	148.75
10	16.25	179.50	1.50	33.75	231.00
11	4.00	230.75	0.00	9.25	244.00
12	60.00	57.75	0.50	6.50	124.75
14	0.00	92.00	44.25	18.75	155.00
Total	496.75	2,388.50	96.50	525.75	3,507.50

Acreage by Districts

July 1989 - June 1990

District	A	B	C	D	E	Total
1	41.25	49.75	0.00	125.00	0.00	216.00
2	105.00	149.25	40.00	0.00	0.00	294.25
3	44.00	254.75	35.00	0.00	0.00	333.75
4	191.50	199.00	47.00	0.00	0.00	437.50
5	23.75	51.75	93.00	0.00	0.00	168.50
6	108.50	207.25	85.00	0.00	150.00	550.75
7	71.75	236.50	65.00	0.00	0.00	373.25
8	75.75	120.25	34.00	0.00	0.00	230.00
9	33.75	105.00	10.00	0.00	0.00	148.75
10	42.50	188.50	0.00	0.00	0.00	231.00
11	56.50	139.75	47.75	0.00	0.00	244.00
12	4.75	85.00	35.00	0.00	0.00	124.75
14	30.75	104.25	20.00	0.00	0.00	155.00
Total:	829.75	1,891.00	511.75	125.00	150.00	3,507.50

Fires (Size by District)

July 1989 - June 1990

District	A	B	C	D	E	Total
1	165	28	0	1	0	194
2	399	130	1	0	0	530
3	174	199	2	0	0	375
4	764	170	2	0	0	936
5	93	26	4	0	0	123
6	409	152	8	0	1	570
7	265	163	5	0	0	433
8	297	80	2	0	0	379
9	134	43	1	0	0	178
10	170	92	0	0	0	262
11	220	95	4	0	0	319
12	19	70	2	0	0	91
14	120	82	1	0	0	203
Total:	3229	1330	32	1	1	4593

Acreage by Causes

July 1989 - June 1990

Light	Campers	Smoker	Debris	Incendiary	Equip. Use	R.R.	Children	Misc.	Total
0.25	3.00	2.75	21.50	35.00	143.75	0.00	9.00	0.75	216.00
0.50	2.75	12.25	23.25	129.25	5.00	0.00	87.50	33.75	294.25
0.00	4.75	5.25	21.50	171.25	3.50	0.00	27.75	99.75	333.75
0.50	36.25	20.25	72.00	118.25	2.50	3.00	174.50	10.25	437.50
0.00	70.50	11.00	53.00	0.00	0.00	0.50	27.75	5.75	168.50
0.25	13.75	36.00	184.25	22.25	4.75	0.75	237.75	51.00	550.75
0.00	10.50	27.00	51.75	121.00	8.75	0.25	31.50	122.50	373.25
1.25	6.25	21.00	72.25	53.25	3.25	28.00	36.00	8.75	230.00
0.25	8.00	10.50	61.00	27.00	22.50	4.00	15.50	0.00	148.75
0.00	21.75	23.00	19.50	8.00	0.25	0.00	156.00	2.50	231.00
0.00	0.75	11.25	68.50	38.50	0.50	0.25	121.75	2.50	244.00
15.00	0.25	4.00	26.25	56.75	0.00	22.50	0.00	0.00	124.75
0.00	4.75	6.00	14.50	10.50	16.00	3.00	100.25	0.00	155.00
18.00	183.25	190.25	689.25	791.00	210.75	62.25	1,025.25	337.50	3,507.50

Summary by Causes

July 1989 - June 1990

Dist.	Light	Campers	Smoker	Debris	Incendiary	Equip. Use	R.R.	Children	Misc.	Total
1	1	12	10	53	64	23	0	28	3	194
2	2	10	45	73	149	5	0	163	83	530
3	0	9	18	29	171	8	0	41	99	375
4	2	88	60	237	173	9	5	333	29	936
5	0	5	33	68	0	0	1	13	3	123
6	1	14	81	77	30	7	3	257	100	570
7	0	19	53	44	105	5	1	41	165	433
8	4	6	47	121	40	10	25	100	26	379
9	1	10	13	100	10	18	11	15	0	178
10	0	32	16	34	9	1	0	160	10	262
11	0	3	18	132	12	2	1	143	8	319
12	1	1	4	33	48	0	4	0	0	91
14	0	7	16	29	9	12	9	121	0	203
Total	12	216	414	1030	820	100	60	1415	526	4593

Summary by Districts

July 1989 - June 1990

District	No. of Fires	Acres	Cost
1	194	216.00	31,455.50
2	530	294.25	62,162.20
3	375	333.75	14,110.00
4	936	437.50	14,916.00
5	123	168.50	4,314.00
6	570	550.75	10,598.85
7	433	373.25	6,105.50
8	379	230.00	52,891.00
9	178	148.75	21,203.75
10	262	231.00	16,701.65
11	319	244.00	4,313.00
12	91	124.75	873.00
14	203	155.00	4,565.00
Total	4593	3,507.50	244,209.45

Summary by Month

July 1989 - June 1990

Month	No. of Fires	Acres	Cost
July	456	164.25	33,386.30
August	138	40.00	6,946.65
September	146	52.00	7,208.15
October	167	83.25	8,365.34
November	126	64.00	5,887.11
December	35	14.50	510.50
January	176	60.75	3,333.00
February	214	156.50	7,359.25
March	1050	903.75	47,776.65
April	1467	1,533.00	90,871.95
May	478	379.25	28,689.55
June	140	56.25	3,875.00
Total	4593	3,507.50	244,209.45

ANNUAL REPORT

FISCAL YEAR 1990

BUREAU OF SHADE TREE MANAGEMENT & PEST CONTROL

JAMES MACARTHUR, CHIEF

ASSISTANT CHIEF ERNEST DEROSA

INTRODUCTION

Fiscal year 1990 proved to be a very productive and progressive year for the Bureau of Shade Tree Management and Pest Control. Bureau Tree Crews were in constant demand doing tree planting, tree removals, hazardous tree pruning and maintenance, stump grinding and emergency storm clean-up in the Department's Forest and Park facilities statewide.

Bureau personnel continue to monitor and survey the state for insect and disease outbreaks, keeping Tree Wardens, public officials, and the general public informed of current pest problems. The Bureau is also involved in various research projects cooperating with the U.S. Forest Service, the University of Massachusetts and other Northeast area states.

The U.S. Forest Service initiated a new program called "Forest Health Monitoring". This program will involve intensive data collection by Bureau Staff in Forest plots statewide.

Bureau personnel have achieved great strides in promoting and implementing the Mass. ReLEAF program, Tree City USA and Arbor Day programs.

Additional accomplishments and endeavors of the Bureau are fully explained in the following report.

Personnel

Pete Porrazzo retired as District Supervisor of the Bureau of Shade Tree Management and Pest Control after 38 years in the Department. Pete began working in the Department as a Conservation Helper, then went on to be a Tree Climber, Tree Crew Foreman and District Supervisor serving Middlesex and Essex Counties.

Due to budget constraints the Bureau was unable to replace Mr. Porrazzo in District 4 causing a void in that position.

INSECT/PEST ACTIVITIES

Gypsy Moth

Defoliation from Gypsy Moth for the Commonwealth of Massachusetts dramatically increased this year compared to last years figures of 6,618. An aerial survey conducted in July of 1990 revealed pockets of defoliation throughout the state totaling 83,595 acres. The worst defoliation occurred in Hamden, Hampshire, Franklin, Worcester and Bristol Counties.

The fungus Entomophaga caused significant caterpillar mortality in all areas where gypsy moth activity occurred. Despite this there was an increase in egg mass counts in all the infested areas with the exception of Southern Worcester county. All indications point to a greater possibility that there will be an increase in visible defoliation by Gypsy Moth in 1991.

Pear Thrips

Pear Thrips, Taeniothrips inconsequens which caused serious defoliation of sugar maples in the Northeast in 1988, were present in large numbers in Berkshire, Hamden, Hampshire and Franklin Counties. As was the case last year little damage occurred from this pest. It appears the timing of insect emergence and bud development is the key factor as to how much damage pear thrips will cause. The most severe damage occurs when trees are in the bud state. It appears that Pear Thrips will continue to be a threat to sugar maples in future seasons.

HEMLOCK WOOLY ADELGID

Hemlock Wooly Adelgid (Adelges Tsugae), which was first discovered in Massachusetts last year in the forest park area of Springfield, was identified on hemlock trees in Waltham by a U-Mass entomologist. There appears to be no spread of the infestation of this pest in the Springfield area. However this insect is very difficult to survey and there is a possibility of its unknown presence in other areas of the state. Hemlock trees will require continuous monitoring to determine the prevalence of Hemlock Wooly Adelgid in the State.

CHERRY SCALLOOP SHELL MOTH

The cherry scalloop shell moth, calocalpe undulata, occurs on wild and choke cherries throughout much of eastern north america. The caterpillars live in nests which they construct by webbing together the leaves toward the end of a branch.

Rather sudden increases of these insects have caused noticeable defoliation in Worcester County and north Berkshire County a heavy infestation was reported on the M.D.C. ware river watershed property. The majority of the infestations were localized but heavy on individual cherry trees. The unusual onslaught of this.

OAK LEAF TIER - OAK LEAF ROLLER COMPLEX.

Oak Leaf tier (croesia semipurpurana) and oak leaf roller (Archips semiferanus) have been observed feeding in concert in Bristol, Norfolk, and Franklin counties. A small outbreak of these insects have been occurring in the Auburn-Oxford-Grafton area of Worcester County for the past three years with limited damage to oak stands and no apparent acceleration of tree mortality to date. Most defoliation from these insects ranging from light to moderate on individual trees and stands of trees occurred in Bristol and Norfolk counties. Oak leaf Tier populations have fallen below the level of noticeable defoliation in the Warwick area of Franklin County.

FALL CANKERWORM

The Fall Cankerworm, Aslophila pametaria, often called "inchworms" is a defoliator of various hardwood trees. This insect feeds by skeletonizing the leaves of hosts causing severe aesthetic damage to ornamental and shade trees.

After causing significant defoliation in 1989 with approximately 2,000 acres affected in Falmouth, Scituate, and Nantucket, the 1990 aerial survey shows a reduction to 800 acres spreading north from the original infestation in Falmouth.

EASTERN TENT CATERPILLAR

Eastern Tent Caterpillar (Malacosoma americanum) was noticeable present in Berkshire and Middlesex counties this year. This pest occurs sparsely statewide feeding on the foliage of various hardwood trees. The caterpillar prefer fruit trees such as

Wild Cherry, Apple, Crabapple, and others that are commonly used as ornamental in the landscape. The most KXD impact of this pest is the defoliation and unsightly silken tents that are formed in branch crotches of these ornamental which ruins the tree aesthetic appearance.

OAK SKELETONIZER

The Oak Skeletonizer, (Bucculatix ainsliella) in the caterpillar stage feeds on the surface of oak leaves leaving the veins of the leaves untouched. This insect has two or more generations per year. During the spring and early summer they often go unnoticed. However, second and third generations of this pest in late summer can cause severe damage to oak trees. Trees that sustain repeated attacks are weakened and suffer crown thinning and die-back. Occasional outbreaks of this insect in or around residential areas becomes an annoying public nuisance when the small yellowish-green caterpillars spin down from infested oak trees landing on anyone or anything underneath. Their habit of forming small, white, ribbed cocoons on almost anything including lawn furniture, window screens, etc. is also very annoying. This insect has declined since last year with only slight infestations reported in Essex and Middlesex counties.

BROWN TAIL MOTH

The Brown Tail Moth, (Euproctis chrysorrhoea) continues to be confined on the Cape Cod National Seashore in the towns of Barnstable, Wellfleet, Truro, and Providencetown. It appears this infestation remains stable in this area, the towns of Truro and the Seashore continue their attempt to reduce Brown Tail Moth populations by hand clipping the winter nests of this pest. These insects feed mostly on bayberry. Not only are they destructive on host plants but they are also considered a health problem since some people suffer severe skin rashes after coming in contact with caterpillar hairs.

NANTUCKET PINE TIP MOTH

The Nantucket Pine Tip Moth, (Rhyacionia frustriana) attacks many species of pine by boring into the branch terminals. This insect prefers pitch, scots and other short needled pines.

This insect occurs annually on Cape Cod in Barnstable and Plymouth counties. They are particularly destructive to young trees causing growth reduction, stem deformities and prolonged stress the often results in subsequent tree mortality. Many younger trees have succumb to this pest.

PINE NEEDLE MINER

The Pine Needle Miner, (Exoteleia pinefoliella) causes severe browing and subsequent defoliation of pine trees. The injury from this pet, which often occurs on trees also infested by the Nantucket pine tip moth, is particularly noticeable along major highways leading to Cape Cod. Heavy defoliation from this insect was reported along Route 3 in Plymouth. Various degrees of defoliation occur annually in Plymouth and Barnstable counties causing much public concern.

FALL WEBWORM

The Fall Webworm, (Hyphantria Cunea) was noticeable prevalent this year throughout Middlesex and Southern Worcester counties. Although this insect is not considered a threat to host trees since it feeds on the foliage late in the growing season, it often causes public attention due to the unsightoly large webs it creates, particularly in the home landscape.

SADDLED PROMINENT

The Saddled Prominent, (Heterocampa guttivitta) defoliates hardwood trees, preferably beech, birch and maple from late July through early September. Significant damage was noted in large areas in Northern Berkshire and Hampshire counties in late July and early August. However, it appears that the majority of the population of this pest collapsed before any severe defoliation occurred. It is thought that either the same Entomophaga fungus that affected gypsy moth or a similar form of the fungus is responsible for the collapse of these insects. The areas affected by this pest will be monitored closely in 1991.

FOREST AND SHADE TREE DISEASE

All trees that are susceptible to leaf diseases most likely showed symptoms of infection due to the cool wet spring weather and moist growing season.

ANTHRACNOSE

Anthracnose diseases were very prevalent on a variety of susceptible hosts. Anthracnose diseases are caused by several types of fungi which cause spotting, browning and distortion of leaves and in some cases twig and branch dieback. Most american sycamores were completely defoliated this season from anthracnose. Anthracnose on dogwood often results in tree mortality. Other trees affected by anthracnose include oak, maple and ash.

ASH DECLINE/ASH YELLOWS DISEASE

Continues to plague ash trees throughout the state and the Northeast. Ash mortality is very noticeable in urban and rural forests. Several municipalities are losing mature ash shade trees resulting in increased tree removal costs. White ash appears to be more susceptible to the disease. Several factors may cause the decline but recent research has shown that a myco-plasma like organism (MLO) is a primary casual agent for ash decline and subsequent mortality.

SUGAR MAPLE DECLINE

Continues to be monitored throughout Berkshire, Hamnpshire and Franklin counties. This decline complex is the focus of on-going cooperative research between this department, the U.S. Forest Service and the University of Massachusetts. Forest and shade trees are affected, although there is a different combination of stress factors involved.

HORSE CHESTNUT LEAF BLOTCH

Horse Chestnut Leaf Blotch, which is caused by the Fungus Guignardia aesculi, was very noticeable wherever these trees have been planted. This disease caused severe browning of foliage and early leaf drop on horse chestnuts planted as street trees or in the landscape.

PINE TIP BLIGHT

Pine Tip Blight caused by the fungus Pinea diplodia has been prevalent in Marthas Vineyard State Forest for several years and has virtually killed out the majority of red pine in the forest.

Regeneration of other tree and shrub species is starting to occur in this area.

SHADE TREE MANAGEMENT ACTIVITIES

D.E.M. FACILITIES

The Department's forests and park facilities are observed regularly by the Bureau's District supervisor to determine shade tree management needs within those facilities. District Supervisors also respond to the requests for arboricultural services from Park Supervisors which are prioritized in the Regional office. It is our responsibility to make sure the department's forests and park facilities are free of potentially hazardous trees in areas accessible to the public.

During F.Y. 90 the Bureau's tree crews provide arboricultural services at 599 forest and park facilities statewide. These facilities include state forests, state parks, heritage state parks, fire towers regional offices, swimming pools and skating rinks.

A variety of services are provided at these facilities including tree removals, tree pruning, tree planting, poison ivy control, weed control, insect and pest surveys, insect control, hazard tree surveys, utility line clearance, stump removals, vista pruning and site clearance.

ASSISTANCE TO OTHER AGENCIES:

The Bureau's District Supervisors and Tree Crews often receive requests from other state and federal agencies to provide arboricultural services and technical information.

During F.Y. 90 the Bureau provided assistance to the following agencies.

Department of Mental Health
Mass. Dept. of Public Works
Metropolitan District Commission
Belchertown State School, Civil Defense
Mass. State Police
Quinsigamond Community College
Worcester County 4-H Camp
Rutland State Hospital
University of Massachusetts - Amherst
Department of Education
University of Mass. - Lawrence Labs
Northampton State Hospital
North Adams State College
Berkshire Community College

MUNICIPAL ASSISTANCE

Bureau personnel are also responsible for providing technical assistance to municipal Tree Wardens and other public officials. Bureau Chief and District Supervisors often visit cities and towns providing public officials with technical information regarding diagnosing insect and disease problems of forests and shade trees, surveying insect populations, determining pest control strategies, identifying potentially hazardous trees, instruction of proper arboricultural practices, and developing and implementation shade tree inventories and management plans.

Tree crews also provide emergency assistance to the town of Princeton following a severe storm that whipped through northern Worcester County. The storm had tornado like winds that downed many tree and power lines and blocked roads throughout the town. The crew assisted in the storm damage cleanup by clearing town roads so that power lines could be restored and emergency vehicles could pass by.

Bureau personnel also participated in municipal Arbor Day programs, presented Tree City USA awards to qualifying communities and promoted the Mass. ReLEAF Grant Program (see special projects).

EDUCATIONAL PROGRAMS - ATTENDED

Throughout the year Bureau personnel attended and participate in a variety of educational seminars, workshops, conferences, and field related association meetings. It is important for employee career development and professionalism

The Bureau's District Supervisors attended the annual meeting of the Massachusetts Tree Warden and Foresters' Association February 6-7, 1990. Assistant Bureau Chief Ernest DeRosa has served as program chairman for this conference for the past six years. Bureau Staff also attended the annual meeting of the Tree Warden's Arborists', and Utilities Conference March 13-15, 1990.

Both of these meetings are historical in nature in Massachusetts dating back to the early 1900's. They provide attendees the opportunity to hear the most-up-to-date information in the tree care profession plus the chance to interact with other professional from all aspects of the industry. Other meetings attended by Bureau Staff include: National Gypsy Moth Review, Annapolis, MD; Fourth Urban Forestry Conference, St. Louis, Mo; Pear Thrips Conference, Burlington , Vt; Gypsy Moth Control Materials Program, White River Jct, Vt; Gypsy Moth Research Meeting, Windsor, Ct; Northeast Forest Pest Council Meeting, Albany, N.Y.; New England Forest Health Monitoring Training, Northwoods, N.H.; New England Chapter International Society of Arboriculture. Hazardous Materials Training Seminars; Birch Leaf Miner Survey Training Workshop; Lyme Disease Seminars; Lakes and Ponds Training Seminars; Pesticide Workshops.

EDUCATIONAL PROGRAMS - CONDUCTED

Bureau Chief, Assistant Chief and District Supervisors are also involved in conducting educational programs for Tree Wardens, Public officials, DEM Park Supervisors and Staff, Professional groups and associations, and the general public. During FY 90, the Bureau as a whole conducted 20 educational seminars to approximately 1050 attendees. These programs covered various topics such as Tree City USA, MA ReLEAF, Chain Saw Safety, Lyme Disease Identification & Prevention, Tree Insects and Disease, Urban and Community Forestry, Proper Tree Care Practices and other Shade Tree Management and Pest Control Activities.

LYME DISEASE

Lyme Disease is a bacterium known as Borrelia Burgdorferi. This disease is carried in the bodies of deer ticks (Ixodes Dammini), which can transmit the disease to humans by biting and attaching to bodily parts. An increase of human cases diagnosed as Lyme Disease in the Northeast has warranted more attention within the Department's Forest and Parks system. A management plan that began in 1987 continues to monitor and control Lyme Disease in two areas where deer ticks appear to be most prevalent, those being Scusset State Beach and Nickerson State Park.

The dispersal of Damminix tubes were effective to the point of reducing the number of ticks collected in the post survey. Other methods being initiated by the Department will be the placement of signs in strategic locations throughout the areas. These signs will define the precautions to be taken to avoid the possibility of contracting Lyme Disease. Handouts with the Departments logo containing similar information are being distributed to campers checking into sites at these locations.

ARBOR DAY PROGRAMS

Arbor Day was held April 28, 1989, with all D.E.M. Arbor Week activities taking place April 15 - April 30, 1989. All Arbor Day activities were coordinated through the Bureau of Shade Tree Management and Pest Control.

STATEWIDE

Arbor Day falls on the last friday in April in Massachusetts, this year being April 27, 1990. Various Arbor Day activities at D.E.M. Forest and Park facilities took place during late April and early May. DEM personnel also participate in several state and municipal Arbor Day events. All Arbor Day activities were coordinated through the Bureau of Shade Tree Management and Pest Control. The Bureau distributed 16,000 fir, spruce and white pine seedlings statewide.

REGIONAL ARBOR DAY PROGRAMS

Region I

*Arbor Day Program Facility - Henry T. Wing School

Date - April 27, 1990

Quantity of Seedling requested - 400

* Arbor Day Program Facility - Heritage Chrisitian School

Date - April 20, 1990

Quantity of Seedling requested - 600

*Arbor Day Program Facility - Otis Air Force Base

Date - April 28, 1990

Quantity of Seedling requested - 150

*Arbor Day Program Facility - Middleboro School System N. District

Date - April 27, 1990

Quantity of Seedling requested - 250 + 500 - 1 Sapling tree

*Arbor Day Program Facility - Nickerson State Park

Date - May 1, 1990

Quantity of Seedlings requested - 175

*Arbor Day Program Facility - Friends Acadamy

Date - April 19, 1990

Quantity of Seedling requested - 65

*Arbor Day Program Facility - Darthmouth Childrens Museum

Date - April 20, 1990

Quantity of Seedling requested - 500 + 1 Sapling Tree

*Arbor Day Program Facility - N. Attleboro Elementary School

Date - April 25, 1989

Quantity of Seedling requested - 100

*Arbor Day Program Facility - Westport Elementary School

Date - April 29, 1989

Quantity of Seedling requested - 107 + 1 Sapling

*Arbor Day Program Facility - Fall River Hertiage S.P.

Date - April 22, 1990

Quantity of Seedling requested - 800

*Arbor Day Program Facility - Borderland State Park

Date - April 27, 1990

Quantity of Seedling requested - 250

*Arbor Day Program Facility - Foxboro State Forest

Date - April 27, 1990

Quantity of Seedling requested - 100

*Arbor Day Program Facility - Stoney Brook Reservation - Norfolk

Date - April 26, 1990

Quantity of Seedling requested - 50

Region II

*Arbor Day Program Facility - Visits to selected schools in district

Date - April 27, 1990

Quantity of Seedling requested - 600 plus

*Arbor Day Program Facility - Halibut Point State Park

Date - April 27, 1990

Quantity of Seedling requested - 200

*Arbor Day Program Facility - Elm School Ashby

Date - April 1990

Quantity of Seedling requested - 400

*Arbor Day Program Facility - Henry Warren School Ashland

Date - April 27, 1990

Quantity of Seedling requested - 400

*Arbor Day Program Facility - Hopkinton Center School K-3

Date - April 26, 1990

Quantity of Seedling requested - 700

*Arbor Day Program Faciity - Shade Tree Mgmt. & Pest Ctrl Stow

Date - April 1990

Quantity of Seedling requested - 50

*Arbor Day Program Facility - Mack Buildin

Date - April 22,23, 1990

Quantity of Seedling requested - 500 + 5 sapling

*Arbor Day Program Facility - Lawrence Heritage State Park

Date - April 27, 1990

Quantity of Seedling requested - 600

*Arbor Day Program Facility - Great Brook Farm State Park

Date - April 20, 1990

Quantity of Seedling requested - 130

*Arbor Day Program Facility - Maudslay State Park

Date - April 28, 1990

Quantity of Seedling requested - 500

*Arbor Day Program Facility - Bradley Palmer

Date - April 27, 1990

Quantity of Seedling requested - 150

*Arbor Day Program Facility - Walden Pond

Date - April 27, 1990

Quantity of Seedling requested - 200

*Arbor Day Program Facility - Cochituate State Park

Date - April 21, 1990

Quantity of Seedlng requested - 500 + 5 Sapling

Region III

*Arbor Day Program Facility - Gardner Hertiage State Park

Date - April 28, 1990

Quantity of Seedling requested - 350

*Arbor Day Program Facility - Worcester Parks Dept., Elm Park

Date - April 28, 1990

Quantity of Seedling requested - 2,000

Region IV

*Arbor Day Program Facility - Belchertown State School

Date - Early May

Quantity of Seedling request - 0 + 1 Sapling

*Arbor Day Program Facility - Elementary School

Date - April 27, 1990

Quantity of Seedling requested - 300 + 1 Sapling

*Arbor Day Program Facility - Hatfield Elementary School

Date - April 27, 1990

Quantity of Seedling requested - 150 + 1 Sapling

*Arbor Day Program Facility - Town of Amherst

Date - April 27, 1990

Quantity of Seedling requested - 86

Region V

*Arbor Day Program Facility - Sheffield Center School

Date - April 27, 1990

Quantity of Seedling requested - 300

*Arbor Day Program Facility - Sturbridge Elementary School

Date - April 27, 1990

Quantity of Seedling requested - 350 + 1 Sapling

*Arbor Day Program Facility - Clarksburg Elementary School

Date - April 27, 1990

Quantity of Seedling requested - 300

Those Massachusetts communities that received Tree City USA Awards this year are as follows:

Sharon	Year 4	Lynn	Year 1
S. Hadley	Year 4	Natick	Year 6
Danvers	Year 6	Acton	Year 6
Manchester	Year 7	Wayland	Year 4
Springfield	Year 4	Wellesley	Year 7
Reading	Year 5	Framingham	Year 5
Lexington	Year 6	Worcester	Year 5
Belmont	Year 5	Amherst	Year 6
Glouster	Year 3	Easton	Year 2
Hanscom AFB	Year 3	Hingham	Year 2
W. Springfield	Year 4	Cambridge	Year 1
Watertown	Year 1	Plymouth	Year 1
Sturbridge	Year 1	Newton	Year 1
W. Boylston	Year 1		

SPECIAL PROJECTS

PEAR THRIPS

An attempt is being made thru funding to UMASs by DEM to determine if pear Thrips colonize and reproduce better on trees which are of low vigor. The method for determining a tree vigor is by analyzing the amount of starch reserves stored in the tree roots. Root samples were collected from 7 sites and the results were supplied to UMASS for site and tree selection. Five Sites were selected (New Salem 2, Worthington 1, and Chesterfield 1). At each site cages were placed over the branch tips by the STM&PC crew prior to thrips emergence. At a later date insects were collected and a known number were released within the cages. After the thrips feeding and egg laying was complete the case and branch tips were clipped and returned to UMASS for analyzation and data collection. UMASS is to prepare a report on the results.

GYPSY MOTH MONITORING AND FOCI

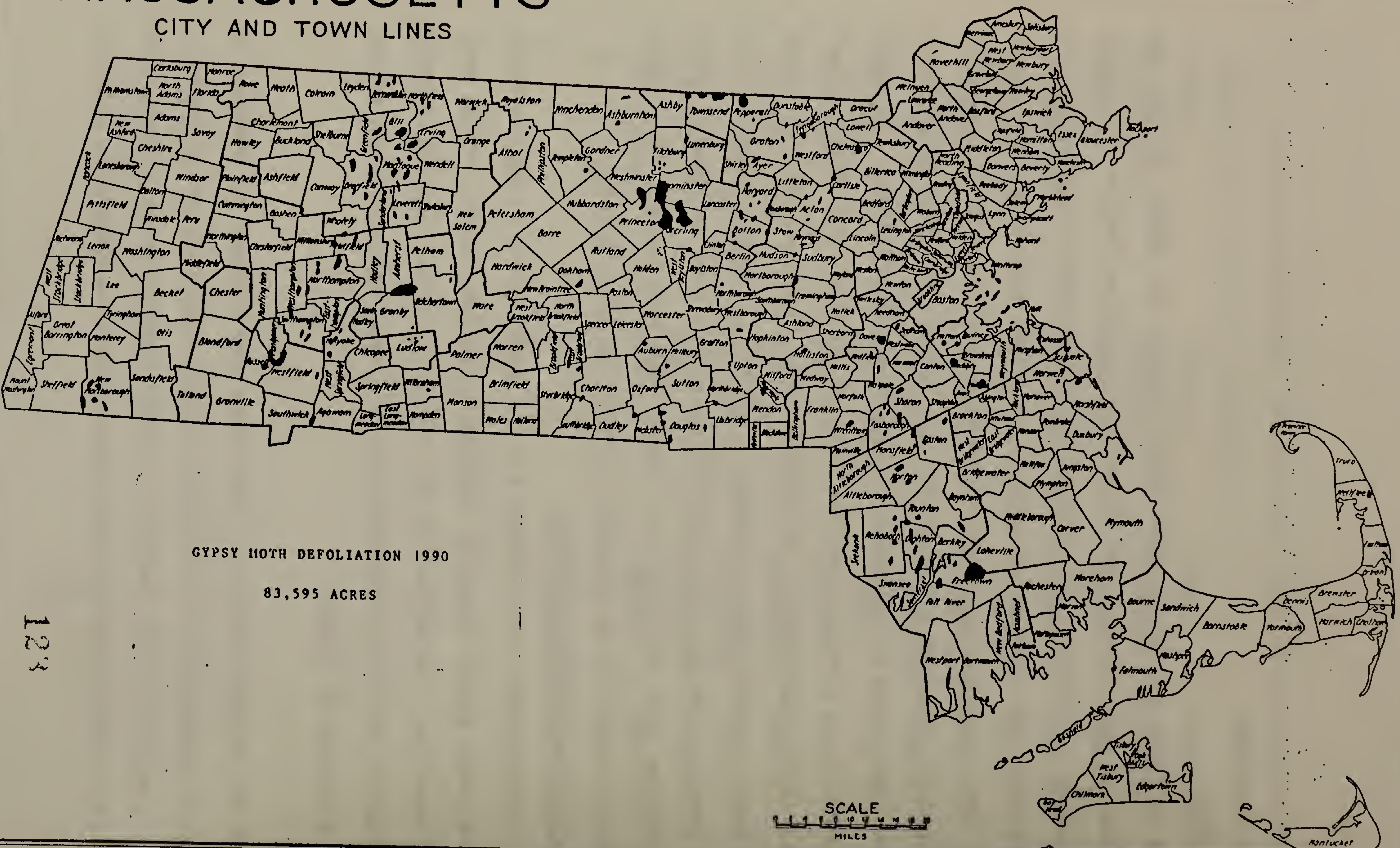
In Cooperation with UMASS the 20 Gypsy Moth plots in each district were again checked, burlaps replaced where needed and traps installed. In September the number of pupae and egg masses were counted, the trap retrieved and all data collected was given to Dr. Elkinton of UMASS.

FOCI

It was decided early in 1990 that the attempt to control a Gypsy Moth population in hot spots (foci) would not be attempted. This is a result of the funding to UMASS ending and if a pesticide application was made several more years would be needed to monitor

MASSACHUSETTS

CITY AND TOWN LINES



GYPSY MOTH DEFOLIATION 1990

83,595 ACRES

results, and also because of the problems in getting an aerial applicators was experience in 1988. However the plots are being maintained on Sawmill Hill (Northampton), and on Country and Dry Hill (Wendell) to continue to monitor the insects population. This is being done without assistance from UMASS.

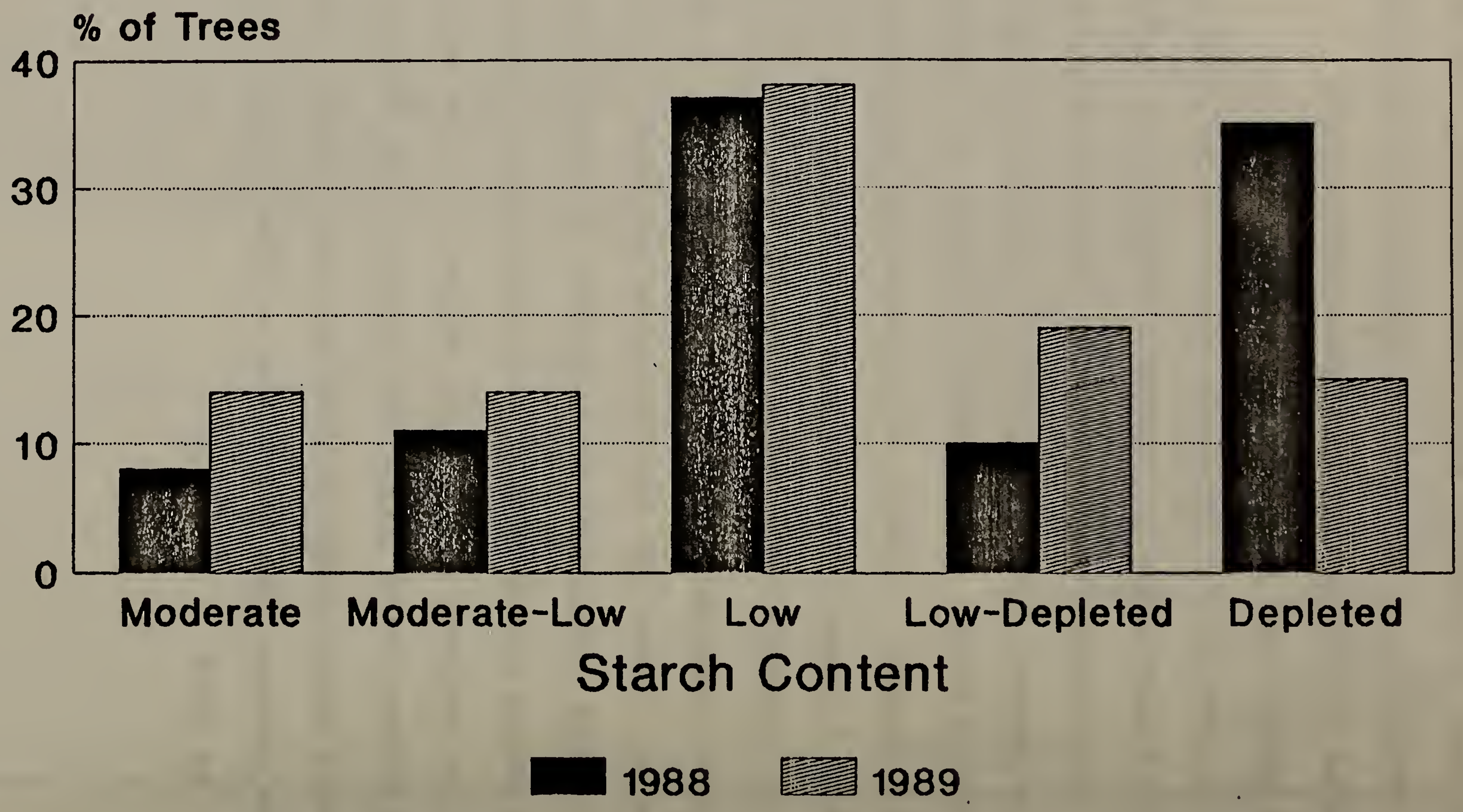
SUGAR MAPLE ROOT STARCH

In 1988 the Sugar Maple stands in Western Massachusetts were severely defoliated by the Pear Thrips. To determine the affects this defoliation on the vigor of the Sugar Maples, root starch data was collected from trees within the North American Sugar Maple Decline Project. The results of this was reported in the FY 89 annual report. Since no defoliation was noted in 1989 it was decided t repeat the process and sample 226 of the same trees. This is slightly less trees than in 1988 but this was done because of time constraints and an increase in workload from other projects. When the results were analyzed it was determined that 42% of the trees had an increase in root starch thus increased vigor while 32% decreased with 26% remaining the same. This would lead to believe that trees which are not stressed by repeated defoliations will start to recover the following season. The attached graph compares the two year results by starch contents. At the present time there are no plans to continue this project in fall of 1990

STARCH CONTENT

Sugar Maple

(Defoliated 1988)



C. Burnham 3/90

results, and also because of the problems in getting an aerial applicators was experience in 1988. However the plots are being maintained on Sawmill Hill (Northampton), and on Country and Dry Hill (Wendell) to continue to monitor the insects population. This is being done without assistance from UMASS.

SUGAR MAPLE ROOT STARCH

In 1988 the Sugar Maple stands in Western Massachusetts were severely defoliated by the Pear Thrips. To determine the affects this defoliation on the vigor of the Sugar Maples, root starch data was collected from trees within the North American Sugar Maple Decline Project. The results of this was reported in the FY 89 annual report. Since no defoliation was noted in 1989 it was decided t repeat the process and sample 226 of the same trees. This is slightly less trees than in 1988 but this was done because of time constraints and an increase in workload from other projects. When the results were analyzed it was determined that 42% of the trees had an increase in root starch thus increased vigor while 32% decreased with 26% remaining the same. This would lead to believe that trees which are not stressed by repeated defoliations will start to recover the following season. The attached graph compares the two year results by starch contents. At the present time there are no plans to continue this project in fall of 1990

FOREST HEALTH MONITORING

Each Bureau Supervisor attended a seminar in New Hampshire for five days on Forest Health monitoring. The program was presented by the US Forest Service in cooperation with the Northeastern States. The program instructed each individual on the use of Forestry related equipment, compass, hand held data processors and computers, aerial photos, plot set ups, tree measuring devices, etc. Upon completion, this information was put to use to set up designated plots across the State to determine the forest health conditions over the next several years.

LYME DISEASE- DAMMINIX TREATMENT

The deployment of Damminix tubes at Scusset Beach State Reservation and Nickerson State Park was carried out again this year. The tubes were put out by Campers and host families and some park personnel at Scusset. At Nickerson the tubes were put out by STM&PC District Supervisor Dick Kelliher, Fire personnel and one host family. I believe this is the last year for this program. Next year more emphasis will be placed on public notification and information regarding precautions to be taken by the user public against the deer tick which spreads Lyme Disease.

BIRCH LEAF MINER SURVEY - U OF MASS

Working with the Entomology Department of University of Mass. Each District Supervisor was instructed to find 20 pots in 5 towns each with the emphasis on gray and white Birch Trees. Each tree was randomly sampled by collecting leaves for each. Visual diagnosis of each leaf was recorded for Birch Leaf Miner. This information was then transferred to the University of

Massachusetts.

YANKEE FOREST COOPERATIVE PROGRAM

District Supervisor Russell Larson continues to be involved with the Insect and Disease Subcommittee of the Yankee Forest Cooperative Project, a Tri-STate Forestry initiative between Massachusetts, Connecticut and Rhode Island., Three aerial surveys were conducted to determine areas of highest mortality in oak stands resulting from repeated Gypsy Moth Defoliation. The Committee designated the highest percent mortality area as the Y.F>C>P> Site Conversion Demonstraton Area. A proposal was submitted to the Management Forester in the Southern Worcester County to initiate a salvage cut and site conversion project.

TREE CITY USA PROGRAM

The Bureau represents our State Forester's Office in the promotion and implementation of the Tree City USA award program which is sponsored by the National Arbor Day Foundation. This award gives national recognition to cities and towns across America that have made special commitment to the planting and care of trees in their communities.

This year seven more communities have been recognized as Tree City USA's in Massachusetts to twenty-seven.

Bureau personnel presented Tree City USA plaques and flags to qualifying communities in conjunction with their local Arbor Day events.

MASS. ReLEAF

On April 28, 1989, Governor Michael S. Dukakis and Environmental Affairs Secretary John DeVillars announced a new state policy encouraging the planting and care of shade trees as a means of combating global warming, conserving energy and improving the quality of life for the Commonwealth's residents. Dubbed "Mass. ReLEAF", this program solicits donations to pay for the planting of shade trees in the state's cities and towns. The money will be distributed to communities through a competive grant program administered by the Department of Environmental Management. Any community that has a tree warden and a budget for the planting and care for shade trees is eligible.

A Mass. ReLEAF Grant Application was mailed out to every Tree Warden and Mayor (or equivalent) in all 351 cities and towns in the Commonwealth. To our surprise 93 communities responded with grant proposals totaling $568,000. Since the program had just begun there was limited funding that allowed the Bureau to partially fund 25 community tree planting projects.

As more funds become available we are optimistic that a significant amount of trees will get planted in our Massachusetts communities through the Mass. ReLEAF program.

OAK LEAF TIER

In an effort to keep track of this insects populations 15" branch samples were collected from the known area of infrestation. These were examined under a microscope for the presence of insect eggs. The results of this sampling indicates that the insect population has fell below the level of noticeable defoliation. It is questionable if the collapse of this insect's population could have been caused by a species of the Entomophaga fungi which also was proven to effect the Gypsy Moth and Saddle Prominent populations. We will continue to monitor this insect in 1990.

FOURTH URBAN FORESTRY CONFERENCE

The conference was attended by the district supervisor Joseph Lokitis. The 1989 conference was hosted by the City of St. Louis, Missouri. This city was chosen because of its central location, active Urban Forestry program, and ideal conference setting located on the edge of the Arch grounds, a beautiful downtown greenway, and the Mississippi River.

The theme of the conference "Make our Cities Safet for Trees" was chosen because it has been discovered that trees offer more than just shade, they work to lower health costs, to replace the need for more power plants, to cleanse the urban environment and reduce global warming. All these facts point to the need to make more space for trees and to make our communities safe for trees.

The conference speakers were chosen for their knowledge ona variety of subjects pertinent to urban forestry. The themes of the sessions were "Trees as the Centerpiece of Tomorrow's Cities and Towns", "Social and Psychological Values", "Energy and

Environment", "Making Cities for Trees", and "Making a Place for Trees".

A municipal tour was taken to observe the results of the new planting campaign in St. Louis and also a drive through Forest Park with stops at St. Louis Zoo, Clayton, University City and Anheuser Bush corporate headquarters.

APPENDIX

DIVISION OF FORESTS AND PARKS REVENUE

SUMMARY OF REVENUE
FORESTS AND PARKS
RINKS
POOLS
BEACHES

FACILITY ATTENDANCE

FORESTS AND PARKS
HERITAGE PARKS
RINKS
POOLS
BEACHES

CONSTRUCTION SUMMARY

LAND TRANSACTIONS

FY 1990 SUMMARY OF REVENUE

AREA	DAY USE	CAMPING	OTHER	TOTAL
BEACHES	781,400.00	931,691.00	42,379.28	1,755,470.28
FORESTS & PARKS	1,246,748.00	1,570,861.25	680,711.16	3,498,320.41
POOLS	96,128.00	–	2,964.71	99,092.71
RINKS	3,712,263.25	–	248,821.24	3,961,084.49
TOTAL	5,836,539.25	2,502,552.25	974,876.39	9,313,967.89

PARKS FY 1990

	PARKING	RECEIPTS	SEASON PASS	BUS	ADULT WALK-INS	HOUSE RENTS	CHILDRENS ROLL -TYPE	COTTAGE PERMITS	CONCESSION	MISC.	PIER PERMITS	GROUP	PAY PHONE	TOTALS
Ames Nowell	6,105.00	220.00	120											6,445.00
Ashland	9,750.00		2,610						461.00					12,821.00
Ashmere Lake								5,400						5,400.00
Beartown	5,830.00	9,323.00	1,830			3,242			150.00					20,375.00
Borderland						7,856				220.00				8,076.00
Boston Harbor ISL.										18,443.91				18,443.91
Bradley Palmer	6,385.00		390			14,642			25.00	1,100.00		270		22,812.00
Buffumville	1,000.00		150											1,150.00
Carlisle(Great Brook)		230.00	30			13,714				883.90				14,857.90
Chester Gardner	7,395.00	784.00	510	40	26									8,755.00
Chicopee	36,290.00		7,020		24	1,839	21		70.25	17.00				45,281.25
Clarksburg	3,095.00	4,208.00	630	40						1,761.00				9,734.00
Cochituate	103,130.00		20,910	1,680	2,796		392		9,307.88	996.00	15,600			154,811.88
D.A.R.	21,235.00	36,509.00	13,620	40					123.00	189.50				71,716.50
Dean Pond(Brimfield)	8,040.00		3,180	40	56		14		50.50	243.75		152		11,776.25
Demarest Lloyd	40,205.00		9,450						247.00					49,902.00
Dighton Rock	960.00		90		14		23							1,087.00
Douglas	55,625.00		13,860	800					1,831.00	1,421.72				73,537.72
Erving	18,210.00	10,114.00	10,680		92		14		400.00					39,510.00
East Mtn.										3,866.00				3,866.00
Foxboro														0.00
Freetown	2,180.00		570			3,048								5,798.00
Granville	3,415.00	8,000.00	390		34		12							11,851.00
Halibut Point	33,545.00		2,820	120	146		6							36,637.00
Hampton Pond	27,370.00		6,150		266	10,381	156		403.50					44,726.50
Harold Parker	11,705.00	80,042.00	300	40					425.00					92,512.00
Holland Pond	2,910.00	16.00	210						61.00					3,197.00
Hopkinton	97,500.00	960.00	25,830	1,000	28		5		13,800.00	300.00	750	3,420	200.00	143,793.00
Lake Dennison	10,815.00	69,240.00	5,850						502.99				1.45	86,409.44
Lake Lorraine	7,515.00		2,760		202		289		501.50					11,267.50
Leominster	18,410.00		7,770		132	2,410			512.00					29,234.00
Martha's Vineyard						3,162								3,162.00
Massasoit	12,300.00	95,278.00	2,670						125.00	3,111.00				113,484.00
Maudslay						8,684				240.00				8,924.00
Mohawk	4,925.00	45,650.00	330						155.00					51,060.00
Moore						4,164								4,164.00
Mt. Grace	555.00											100		655.00
Mt. Greylock	1,715.00	13,402.00	30						1,000.00	33,862.64				50,009.64
Mt. Washington		1,475.00				3,657								5,132.00

PARKS FY 1990

	PARKING	RECEIPTS	SEASON PASS	BUS	ADULT WALK-INS	HOUSE RENTS	CHILDRENS ROLL -TYPE	COTTAGE PERMITS	CONCESSION	MISC.	PIER PERMITS	GROUP	PAY PHONE	TOTALS
Nickerson		474,694.75				9,309			4,250.00	300.00				488,553.75
October Mtn.	405.00	32,976.00	30							30.00			36.71	33,477.71
Otter River	2,500.00	10,081.00	660						159.00				9.78	13,409.78
Otis								6,790		718.49				7,508.49
Pittsfield	6,675.00	13,691.00	480						50.50					20,896.50
Purgatory Chasm									181.90					181.90
Quinsigamond Lake	5,780.00	2,492.50			1,302		179		552.00	100.00				10,405.50
Quinsigamond Regatta	9,575.00		6,510		424		143		2,551.00					19,203.00
Robinson	13,840.00	1,725.00	2,910	40					50.50					18,565.50
Rutland	14,205.00		4,980						361.00					19,546.00
Sandisfield	6,325.00	340.00	3,000	40	18		34			10.93				9,767.93
Savoy Mtn.	3,045.00	32,280.00	810		2	1,570								37,707.00
Shawme Crowell	595.00	122,182.00				3,756			461.00					126,994.00
Skinner						6,906								6,906.00
South Mountain														0.00
Spencer	3,535.00		540			2,652			50.00					6,777.00
Tolland	19,985.00	75,155.00	4,470		62		12		105.00					99,789.00
Tully		1,425.00												1,425.00
Upton						3,174								3,174.00
Wachusetts Mtn.						2,192				163,933.00				166,125.00
Walden Pond	210,275.00		71,040			3,102			3,579.00	1,347.12			1,608.29	290,951.41
Warren Manning														0.00
Watson Pond	4,620.00		630						172.00					5,422.00
Wells	1,155.00	51,888.00							61.00	83.16				53,187.16
Wells Streeter	16,680.00		7,050		100		178		121.00					24,129.00
Wendell	4,630.00		4,470		22		39			300.00		240		9,701.00
Willard Brook	18,215.00	12,098.00	4,470	40		2,626			358.00	30.00				37,837.00
Pearl Hill	5,350.00	7,115.00	1,050											13,515.00
Windsor	3,875.00	2,240.00	1,050	80	10		23							7,278.00
Wompatuck	435.00	116,636.00				9,927								126,998.00
Mt. Wilcox										4,866.00				4,866.00
OFFICE ACCT.			630							36,032.75				36,662.75
TOTALS	969,770.00	1,570,861.25	260,070	5,280	5,856	127,543	1,590	194,210	51,869.06	275,607.87	16,350	4,182	1,856.23	3,485,045.41

PARKS FY 1990

	Trailer Fees
Walden Breezes	9,945.00
TOTALS	**9,945.00**

	Adm. Fees
Region 1	1,740.00
Region 2	0.00
Region 3	510.00
Region 4	1,050.00
Region 5	30.00
TOTALS	**3,330.00**

RINKS FY 1990

	CHILDREN	ADULTS	SPECIAL EVENTS	RENTALS	WALK-INS	LOCKERS	CONCESSION	PAY PHONE	MISC.	JOGGING	COMBINATION	PATCH FREESTYLE	ADMIN. FEES	TOTALS
AUBURN	12,323	8,577	2,504.50	189,300.00		957.75	500.00	35.07			9,068.00	3,744.00		227,008.82
BROCKTON	12,041	11,175	8,951.50	217,069.50		969.50	9,600.40				8,292.00	231.00		268,329.90
FALL RIVER	10,202	9,909	4,119.50	190,890.00		1,272.00	7,518.00				11,746.00	195.00		235,851.50
FRANKLIN	16,497	24,786	8,975.00	248,526.00		652.50	9,325.00	5.63	2.50		8,684.00	1,462.50		318,916.13
GARDNER	6,894	5,359	3,092.50	147,750.00		467.50	1,145.00				5,461.00	1,671.00		171,840.00
GREENFIELD	7,533	5,346	1,177.25	121,655.00		175.00	2,750.00				1,922.00	99.00		140,657.25
HAVERHILL	11,414	8,022	3,909.50	171,990.00		463.50	3,667.00				1,738.00	1,240.50		202,444.50
HOLYOKE	5,139	8,733	3,369.25	153,540.00		300.75	3,725.50				3,344.00	87.00		178,238.50
LOWELL	9,336	15,453	5,794.50	220,840.00		360.25	4,000.00	119.06			8,024.00			263,926.81
MARLBORO	8,764	7,542	1,163.50	188,940.00		267.25	920.00		30.00		3,774.00	6,151.50		217,552.25
NEW BEDFORD	5,859	2,796	7,214.50	189,051.00		560.27	5,601.00				9,640.00	1,654.50		222,376.27
NEWBURYPORT	14,077	8,343	11,917.00	226,764.75		528.65	15,125.53				8,076.00	231.00	30.00	285,092.93
NORTH ADAMS	3,208	3,789	1,792.00	85,291.00		131.50	3,019.00	5.23			2,053.00	1,384.00		100,672.73
PEABODY	11,556	11,463	5,254.50	213,545.00		371.75	10,074.71		108.50			8,346.00		260,719.46
PLYMOUTH	14,860	8,838	6,220.00	185,558.00		608.00	6,268.66				5,176.00	1,198.50		228,727.16
SPRINGFIELD	4,387	4,563	2,252.00	177,365.00		305.05	372.44				4,862.00	1,255.50		195,361.99
TAUNTON	5,735	7,728	5,272.00	199,812.00		604.25	8,310.00				10,766.00	36.00		238,263.25
WORCESTER	12,150	14,022	2,508.50	160,470.00		895.75	5,795.00	22.29			4,782.00	3,889.50		204,535.04
REGION 1													570.00	570.00
TOTALS	171,975	166,444	85,487.00	3,288,357.25		9,891.22	97,717.24	187.28	141.00		107,408.00	32,876.50	600.00	3,961,084.49

POOLS FY 1990

	CHILDREN	ADULTS	PASSES GROUP	LOCKERS	PAYPHONE	CONCESSION	MISC.	SPECIAL USE PERMIT	TOTALS
AGAWAM	1,464.00	1,682.00				50.50			3,196.50
ATTLEBORO	2,408.50	2,554.00				466.67			5,429.17
BROCKTON	3,766.00	2,975.00							6,741.00
CHICOPEE	2,474.50	1,607.00				50.50			4,132.00
CLINTON	2,296.50	774.00				379.00			3,449.50
FALL RIVER	6,556.00	1,856.00							8,412.00
FITCHBURG	2,510.00	862.00				479.00			3,851.00
HOLYOKE	2,693.50	903.00				481.99			4,078.49
LAWRENCE(Higgins)	4,270.50	1,496.00						30.00	5,796.50
LAWRENCE(Storrow)	5,869.50	3,914.00							9,783.50
LEOMINSTER	2,091.50	672.00				251.00			3,014.50
LOWELL	3,302.50	684.00					90.00	30.00	4,106.50
LUDLOW	1,878.00	754.00				50.50			2,682.50
MILFORD	3,476.00	1,887.00				400.00			5,763.00
SOUTHBRIDGE	2,772.50	1,126.00				50.00			3,948.50
SOUTH HADLEY	2,705.50	2,097.00				50.50			4,853.00
SPRINGFIELD	2,146.00	382.00				50.50			2,578.50
WESTFIELD	1,938.50	1,022.00			4.05	50.50			3,015.05
WORCESTER#1(Shine)	4,307.00	2,829.00							7,136.00
WORCESTER#2(B.FIELD)	4,158.50	2,967.00							7,125.50
TOTALS	**63,085.00**	**33,043.00**			**4.05**	**2,810.66**	**90.00**	**60.00**	**99,092.71**

BEACHES FY 90

	PARKING	RECEIPTS	WALK-INS	SEASON PASS	BATH HOUSE	CONCESSION	LOCKERS	PAYPHONE	MISC.	BUS	HOUSE RENT	CHILDRENS WALK-INS	TOTALS
FT.PHOENIX	11,360			9,750		411.00							21,521.00
HORSENECK	371,460	109,988	8.00	74,820		31,292.00			200.30	640		52	588,460.30
SALISBURY	153,085	575,303		34,860		6,486.25		81.73	300.00	680	3,214		774,009.98
SCUSSET	90,230	244,630		12,630		356.00			38.00	280			348,164.00
SOUTH CAPE	21,545	1,770											23,315.00
TOTALS	**647,680**	**931,691**	**8.00**	**132,060**		**38,545.25**		**81.73**	**538.30**	**1,600**	**3,214**	**52**	**1,755,470.28**

1990 FISCAL YEAR
ATTENDANCE RECORD

AREA	CAMPING	DAY USE	NON-PAID	PAID	TOTAL
AMES NOWELL	-	31,253	27,312	3,941	31,253
ASHLAND	-	62,266	50,702	11,564	62,266
BEARTOWN	6,285	31,069	26,600	4,469	37,354
BLACKSTONE	-	18,040	18,040	-	18,040
BORDERLAND	-	103,491	103,491	-	103,491
* BOSTON HARBOR ISLANDS	500	30,788	30,788	-	31,288
BRADLEY PALMER	-	65,107	60,555	4,552	65,107
BRIMFIELD	212	14,360	8,196	6,164	14,572
BUFFUMVILLE	-	8,270	8,270	-	8,270
CALLAHAN	-	59,380	59,380	-	59,380
CAMPBELL FALLS	-	9,415	9,415	-	9,415
CAPE COD RAIL TRAIL	-	123,661	123,661	-	123,661
CHESTER-BLANDFORD	341	851	659	192	1,192
CHICOPEE	-	56,167	24,691	31,476	56,167
CLARKSBURG	1,453	2,906	984	1,922	4,359
COCHITUATE	-	179,060	96,204	82,856	179,060
COOKSON	-	2,740	2,740	-	2,740
D.A.R.	17,911	56,178	31,046	25,132	74,089
DIGHTON ROCK	-	2,829	2,031	798	2,829
DOUGLAS	-	80,744	37,031	43,713	80,744
DUBUQUE	-	20,225	20,225	-	20,225
ERVING	4,041	66,512	51,963	14,549	70,553
F.G. HILLS	-	9,001	9,001	-	9,001

*** includes all people transported by DEM to MDC Islands**

1990 FISCAL YEAR
ATTENDANCE RECORD

AREA	CAMPING	DAY USE	NON-PAID	PAID	TOTAL
FEDERATED	2,935	11,506	10,713	793	14,441
FREETOWN	-	17,231	14,204	3,027	17,231
GARDNER	35	6,459	929	5,530	6,494
GRANVILLE	8,529	8,810	5,468	3,342	17,339
GREAT BROOK FARM	-	37,092	37,092	-	37,092
HALIBUT POINT	-	89,744	70,480	19,264	89,744
HAMPTON PONDS	-	40,840	19,390	21,450	40,840
HAROLD PARKER	26,110	57,160	45,069	12,091	83,270
HOLLAND POND	186	18,326	16,310	2,016	18,512
HOLYOKE NOTCH VISITOR	-	46,447	46,447	-	46,447
HOPKINTON	-	184,064	123,326	60,738	184,064
LAKE DENNISON	26,637	71,256	61,803	9,453	97,893
LAKE LORRAINE	-	8,463	163	8,300	8,463
LEOMINSTER	4,629	34,607	22,666	11,941	39,236
M.F. CORRELLUS	-	59,652	59,652	-	59,652
MASSASOIT	39,022	47,942	36,419	11,523	86,964
MAUDSLAY	-	94,852	94,852	-	94,852
MOHAWK TRAIL	11,257	20,054	17,025	3,029	31,311
MOORE	-	20,101	20,101	-	20,101
MT. EVERETT	-	18,506	18,506	-	18,506
MT. GRACE	-	14,656	14,120	536	14,656
MT. GREYLOCK	4,729	148,307	147,365	942	153,036

1990 FISCAL YEAR
ATTENDANCE RECORD

AREA	CAMPING	DAY USE	NON-PAID	PAID	TOTAL
MT. SUGARLOAF	-	117,058	117,058	-	117,058
MT. WASHINGTON	810	43,690	43,690	-	44,500
MYLES STANDISH	83,059	429,205	394,457	34,748	512,264
NATURAL BRIDGE	-	16,631	7,400	9,231	16,631
NICKERSON	124,367	101,849	101,849	-	226,216
OCTOBER MT.	7,080	47,883	47,015	868	54,963
OTTER RIVER	5,246	55,236	53,115	2,121	60,482
PEARL HILL	3,512	19,177	11,773	7,404	22,689
PILGRIM MEMORIAL	-	725,713	725,713	-	725,713
PITTSFIELD	4,866	21,967	18,646	3,321	26,833
PLUM ISLAND	-	65,302	65,302	-	65,302
PURGATORY CHASM	-	89,069	89,069	-	89,069
QUINSIGAMOND - LAKE PARK	-	147,806	143,808	3,998	147,806
QUINSIGAMOND - REGATTA	-	252,615	245,598	7,017	252,615
ROBINSON	-	21,659	12,235	9,424	21,659
RUTLAND	13,027	29,743	24,857	4,886	42,770
SANDISFIELD(West Lake)	20	3,863	3,863	-	3,883
SAVOY	8,463	16,682	14,838	1,844	25,145
SHAWME-CROWELL	26,866	8,738	8,163	575	35,604
SKINNER	-	117,585	117,585	-	117,585
SPENCER	-	20,408	17,432	2,976	20,408
STANDISH MONUMENT	-	33,129	33,129	-	33,129

1990 FISCAL YEAR
ATTENDANCE RECORD

AREA	CAMPING	DAY USE	NON-PAID	PAID	TOTAL
STREETER	-	56,195	34,264	21,931	56,195
TOLLAND	26,513	72,797	55,378	17,419	99,310
TULLY REC.AREA	1,071	12,583	12,583	-	13,654
UPTON	-	16,210	16,210	-	16,210
WACHUSETT MOUNTAIN	-	214,938	214,938	-	214,938
WACHUSETT SKI AREA	-	386,995	-	386,995	386,995
WAHCONAH FALLS	-	5,110	5,110	-	5,110
WALDEN POND	-	396,095	285,986	110,109	396,095
WATSON POND	-	20,999	17,389	3,610	20,999
WELLS	22,620	25,065	24,381	684	47,685
WENDELL	-	19,790	12,110	7,680	19,790
WHITEHALL	-	58,882	56,676	2,206	58,882
WILLARD BROOK	4,914	75,028	40,213	34,815	79,942
WILLOWDALE	-	27,495	27,495	-	27,495
WINDSOR	1,287	6,536	2,851	3,685	7,823
WOMPATUCK	22,624	120,641	120,523	118	143,265
YORK LAKE	-	14,212	5,821	8,391	14,212
TOTAL PARKS	**511,157**	**6,004,967**	**4,913,608**	**1,091,359**	**6,516,124**

1990 FISCAL YEAR
ATTENDANCE RECORD

SKATING RINKS	TOTAL
Auburn	157,335
Brockton	120,436
Fall River	140,985
Franklin	204,143
Gardner	152,260
Greenfield	90,063
Haverhill	131,206
Holyoke	109,446
Lowell	156,635
Marlboro	195,258
New Bedford	172,881
Newburyport	129,771
North Adams	41,072
Peabody	120,162
Plymouth	145,894
Springfield	107,252
Taunton	90,378
Worcester	118,353
TOTAL	**2,383,530**

1990 FISCAL YEAR
ATTENDANCE RECORD

SWIMMING POOLS	TOTAL
Agawam	5,902
Attleboro	10,106
Brockton	10,866
Chicopee	10,213
Clinton	18,718
Fall River	19,401
Fitchburg	10,587
Holyoke	6,875
Lawrence (Giesler)	15,853
Lawrence (Higgins)	11,640
Leominster	7,005
Lowell	7,290
Ludlow	11,370
Milford	16,523
Southbridge	7,712
South Hadley	11,075
Springfield	13,462
Westfield	4,865
Worcester #1(Shine)	20,817
Worcester #2(Bennett)	20,578
TOTAL	**240,858**

1990 FISCAL YEAR
ATTENDANCE RECORD

BEACH AREAS	CAMPING	DAY USE	NON-PAID	PAID	TOTAL
DEMAREST LLOYD	-	32,907	5,554	27,353	32,907
FT. PHOENIX	-	51,049	38,631	12,418	51,049
HORSENECK	39,386	346,800	107,957	238,843	386,186
SALISBURY	149,773	1,784,005	1,647,530	136,475	1,933,778
SCUSSET	51,773	123,141	65,708	57,433	174,914
SOUTH CAPE	1,501	27,555	14,639	12,916	29,056
TOTAL BEACHES	242,433	2,365,457	1,880,019	485,438	2,607,890
TOTAL BEACHES AND PARKS	753,090	8,339,636	6,762,839	1,576,797	9,092,726
RINKS					2,383,530
POOLS					240,858
TOTAL RECREATION					11,717,114

HERITAGE PARKS	DAY USE	NON-PAID	PAID	TOTAL
Fall River	151,370	151,370	-	151,370
Gardner	72,682	72,682	-	72,682
Holyoke	110,259	110,259	-	110,259
Lawrence	70,235	70,235	-	70,235
Lowell	415,284	415,284	-	415,284
Lynn	66,228	66,228	-	66,228
North Adams	49,344	49,355	-	49,355
TOTAL	935,413	935,413	-	935,413

SUMMARY

DIVISION OF RESOURCE CONSERVATION – FISCAL YEAR 1990

LAND ACQUISITION – 7/1/89 – 6/30/90

CATEGORY	NO. OF PARCELS	NO. OF CONTRACTS	AVERAGE PER CONTRACT	TOTAL DOLLAR AMOUNT OF EACH CATEGORY
APRAISERS	12	10	$7,800.00	$77,984.00
TITLE EXAMINERS	16	9	1,578.00	14,197.00
SURVEYS	3	2	4,740.00	9,480.00

LAND ACQUIRED IN FISCAL YEAR 1990

NO. OF PARCELS	AMOUNT OF ACREAGE	TOTAL COST OF PARCELS ACQUIRED
21	1,295.6 A	$5,012,614.00
	GRAND TOTAL:	$5,114,275.00

ACQUISITION & CONSTRUCTION

FISCAL YEAR 1990

LAND ACQUISITION - 7/1/89 to 6/30/90

LOCATION	AREA	GRANTOR	DATE RECORDED	ACREAGE	COST
WESTMINSTER & PRINCETON	LEOMINSTER S.F. (Remaining ½ Int.)	GEROLDINE G. FITZGERALD	8/7/89	(54A)	$ 26,000.
IPSWICH	BRADLEY W. PALMER S.F.	MASSACHUSETTS FARM AND CONSERVATION LANDS TRUST	8/25/89	2.8A	284,000.
PRINCETON	MT. WACHUSETT S.R.	STANLEY D. PORTER ET UX	8/30/89	13.04A	15,300.
BOSTON ROXBURY	ROXBURY HERITAGE S.P.	DEPT. OF PUBLIC WORKS	9/18/89	42,046s.f.	TRANSFER
ADAMS	GREYLOCK GLEN	HERITAGE BANCK FOR SAVINGS HEIRS OF CHARLES RICH & UNKNOWN	9/28/89	928A	2,300,000.
MONTAGUE (TURNERS FALLS)	CONNECTICUT RIVER BIKEWAY-EASEMENT	ESLEECK MANUFACTURING COMPANY, INC.	11/1/89	(15,208.S.F)	EASEMENT
WASHINGTON	OCTOBER MOUNTAIN S.F.	JOHN S. KEBABIAN & ELEANOR L. KEBABIAN	11/6/89	110A	GIFT
SCITUATE	SCITUATE HARBOR	COMMONWEALTH OF MASS.	11/3/89	5 HOUSE LOTS	TRANSFER
PLYMOUTH	FIRE WATCH TOWER ACCESS EASEMENT	DIGITAL EQUIPMENT CORPORATION	11/10/89	(2.5A)	GIFT
GREAT BARRINGTON & MONTEREY	APPALACHIAN TRAIL	GEORGE OREMLAND & LOIS HARNICK	11/15/89	33A	300,000.
DEERFIELD	CONNECTICUT RIVER (CONSERVATION RESTRICTION)	BENJIE A.G. LASSEAU	12/27/89	(48A)	GIFT

ACQUISITION & CONSTRUCTION

FISCAL YEAR 1990

2 of 2

LAND ACQUISITION - 7/1/89 to 6/30/90

LOCATION	AREA	GRANTOR	DATE RECORDED	ACREAGE	COST
LAWRENCE	MERRIMACK RIBER FRONT PARK	LAWRENCE REDEVELOMENT AUTHORITY	2/13/90	(70,024S.F.)	RIGHT OF WAY
OTIS	FARMINGTON RIVER OTIS - S.F.	EARTH CAMPGROUNDS,INC.	2/13/90	16.87A	$ 554,814.
WENDELL	WENDELL S.F. AGREEMENT TO CONVEY	MARION HARRISON HERRK COMMONWEALTH OF MASS.	2/28/90	(6.3A) (2.75A)	
PLAINFIELD	DEER HILL S.R.	MASS. AUDUBON SOCIETY, INC.	3/19/90	89.3A	100,000.
CHESTERFIELD	CHESTERFIELD GORGE	AMERICAN TELEPHONE & TELEGRAPH COMPANY	3/26/90	50,664S.F.	7,500.
LYNN	LYNN HERITAGE S.P. FACADE EASEMENT	SEAPORT LANDING CONDOMINIUM TRUST	4/23/90	- -	EASEMENT
LYNN	LYNN HERITAGE S.P. (VISITOR'S CENTER)	ECONOMIC DEVELOPMENT & INDUSTRIAL CORP OF LYNN	4/26/90	16,828 S.F.	GIFT
SHUTESBURY & PELHAM	AGRICULTURAL PRESERVATION RESERVATION (APR)	WALTER E. BANFIELD	5/21/90	(278A)	180,000. (384,000)
DOUGLAS	WALLUM LAKE DOUGLAS S.F.	GERALD T. DYER	6/7/90	62.6A	700,000.
ADAMS	GREYLOCK GLEN (CONSERVATION RESTRICTION)	MARGERY L. GOULD	6/20/90	(228A)	515,000.
WENDELL	WENDELL STATE FOREST	VALLEY LAND FUND, INC.	6/29/90	40A	30,000.